Supplement to "The Economic Record", Vol. XXXIII.

THE ECONOMIC RECORD

THE JOURNAL OF THE ECONOMIC SOCIETY OF AUSTRALIA AND NEW ZEALAND

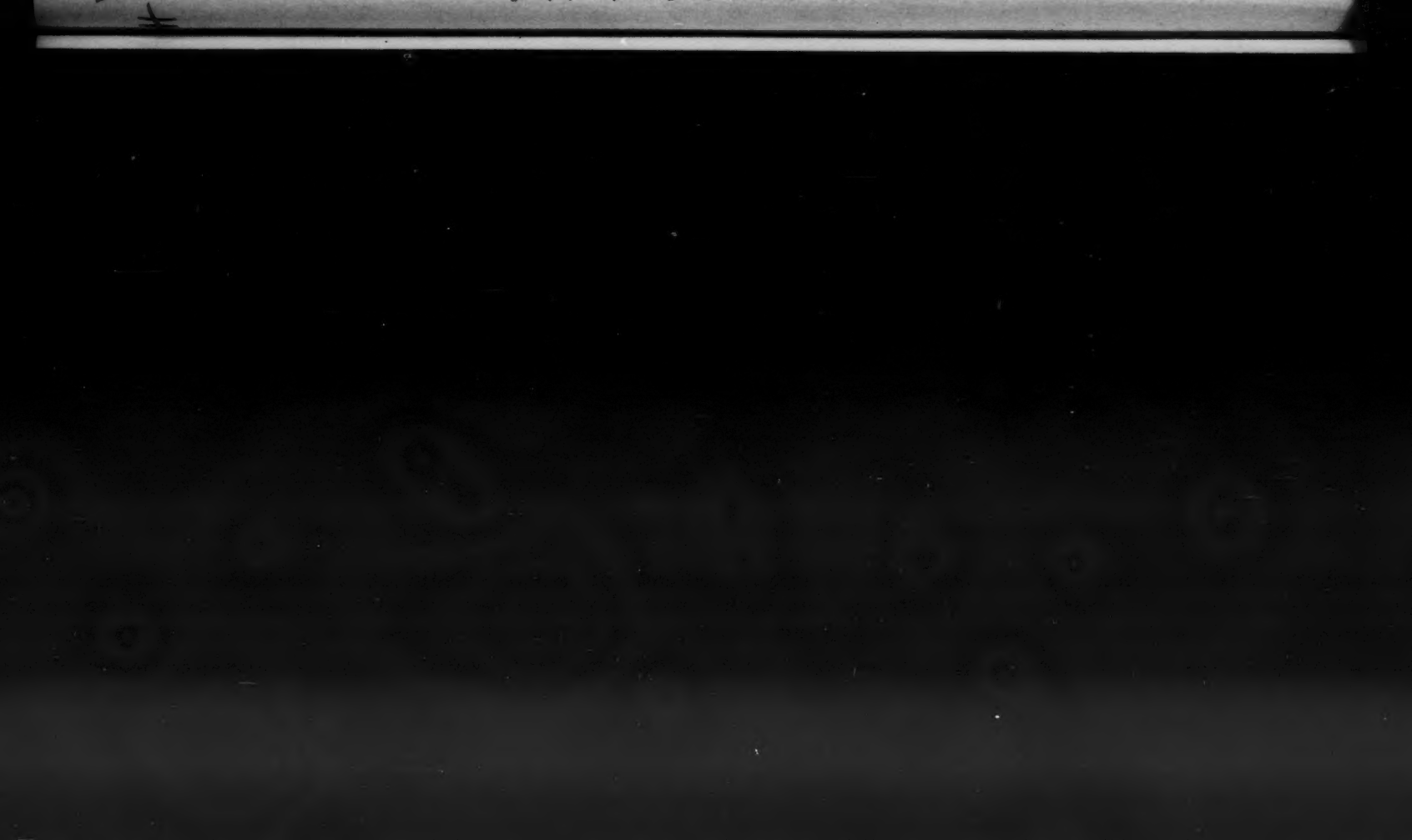
VOLUME THIRTY-TWO
1956

Editor:
R. I. DOWNING

Editorial Board:
H. W. ARNDT
S. J. BUTLIN
W. L. RAWS
C. G. F. SIMKIN
E. P. NEALE

Review Editor:
F. G. DAVIDSON

MELBOURNE UNIVERSITY PRESS



VOL. XXXII MAY, 1956 No. 62

THE ECONOMIC RECORD

UNIVERSITY OF MICHIGAN
AUG -2 1956
PERIODICAL READING ROOM

THE JOURNAL OF
the Economic Society of Australia and New Zealand

THE AUSTRALIAN ECONOMY, MARCH 1956 .. R. I. DOWNING 1

Articles

AUSTRALIA'S LONG-TERM BALANCE OF PAYMENTS PROBLEMS .. .. ERIK LUNDBERG, MALCOLM HILL 28

UNIFORM TAXATION WITH STATES TAXING INCOMES .. .. K. J. BINNS, L. V. BELLIS 50

TOWARDS A THEORY OF INDUSTRIAL CONCENTRATION .. .. EDITH T. PENROSE 64

THE EFFECT OF INFLATION ON COMPANY PROFITS AND FINANCIAL STRUCTURES J. McB. GRANT, R. L. MATHEWS 78

THE OTTAWA AGREEMENT NOW .. .. W. R. CARNEY 99

A PILOT SURVEY OF PERSONAL SAVINGS .. G. C. HARCOURT, DUNCAN IRONMONGER 106

CURRENT AGRICULTURAL DEVELOPMENT AND THE UTILISATION OF RESOURCES K. O. CAMPBELL 119

Notes

FORCED SAVING AND THE MULTIPLIER .. .. C. S. SOPER 135

UNEMPLOYMENT IN NEW ZEALAND DURING THE GREAT DEPRESSION .. .. C. WESTRATE 139

FULL COST PRICING IN THE MULTI-PRODUCT FIRM .. A. C. COOK, N. F. DUFTY, E. H. JONES 142

PRODUCTIVITY AND SIZE OF ESTABLISHMENT IN NEW ZEALAND DISTRIBUTIVE TRADES, 1953 .. .. J. W. BOWE 148

THE DEFINITION OF ECONOMICS .. .. L. J. HUME 152

REJOINDER .. .. KENNETH RIVETT 157

News and Notes 160

Reviews (see Inside Cover) 162

Index to Volume XXXI

MELBOURNE UNIVERSITY PRESS

Price Twelve Shillings and Sixpence Net

Registered at the G.P.O., Melbourne, for transmission by post as a Periodical.

REVIEWS

Page

BAUER, P. T.: *West African Trade* .. .. D. C. ROWAN 166

BLAINEY, GEOFFREY: *The Peaks of Lyell* .. .. J. MCCARTY 162

CHAMBERLAIN, NEIL W.: *A General Theory of Economic Process* H. R. HUDSON 180

DONALD, M. B.: *Elizabethan Copper: The History of the Company of Mines Royal, 1568-1605* .. .. J. A. LA NAUZE 164

DUPRIEZ, L. H. (ed.): *Economic Progress. Papers and Proceedings of a Round Table held by the International Economic Association* JAMES P. BELSHAW 167

FOGARTY, MICHAEL: *Economic Control* .. .. KINGSLEY LAFFER 178

GIFFORD, J. K., WOOD, J. VIVIAN and REITSMA, A. J.: *Australian Banking* .. .. H. W. ARNDT 165

GILBERT, MILTON and STONE, RICHARD: *Income and Wealth. Series IV*. .. .. W. P. HOGAN 170

ISAAC, JULIUS: *British Post-War Migration* .. .. MERAB HARRIS 177

NEWLYN, W. T. and ROWAN, D. C.: *Money and Banking in British Colonial Africa* .. .. H. R. HIRST 165

ROLPH, EARL R.: *The Theory of Fiscal Economics* .. P. H. KARMEL 172

ROTHSCHILD, R. K.: *The Theory of Wages* .. .. J. E. ISAAC 179

SMITHIES, ARTHUR: *The Budgetary Process in the United States* A. H. BOXER 174

TARSHIS, LORIE: *Introduction to International Trade and Finance* D. G. BADGER 175

THE ECONOMIC RECORD

MAY, 1956

THE AUSTRALIAN ECONOMY, MARCH 1956

1. *Recent Economic Developments*[1]

An audience can always be found for a discussion of unemployment, which threatens national poverty, or of the balance of payments, which threatens national bankruptcy. It is more difficult to convince people that it is worth talking about inflation which is, after all, immediately only a problem of how booming prosperity is to be distributed.

Equally, something—not necessarily the best thing—will always be done about unemployment, as a matter of political necessity, and about a balance of payments crisis, as a matter of financial necessity —if we finally run out of international currency we simply have to stop paying for imports.

But it is difficult to get anyone to do anything about inflation. After all, you have to be very sophisticated, when offered the choice between a 10 per cent increase in your money income and a 2 per cent increase in the taxes you must pay, even to pause to think: first, that a substantial proportion of the increased money income will be taken in taxes anyhow; and second, that higher incomes will be accompanied by a continuing price increase which you will always lag behind.

It is the task of the economist to try to persuade us otherwise. He has to look through the heady haze of higher money incomes and worry about the sordid aspects of inflation—the steady transference of wealth and real income to those who drive or can climb earliest on to the bandwagon; the steady decline in the profitability of our export industries and the demoralizing effect of continual depreciation of our currency; the sapping of all the forces which should operate to ensure that we produce the goods and services we want most at the cheapest possible

1. This survey has been written during March, 1956. By the time it is published, later statistics will be available and the Prime Minister should have made his promised annual economic review. We shall be concerned here, therefore, more with trends in the economy than with the provision of the latest statistics. In recent years, the professors of economics in Melbourne, Sydney, Canberra, Adelaide and Hobart have met frequently to discuss economic conditions. Many of the issues raised in this survey have emerged in the course of these discussions. The author is alone responsible, however, for the form in which they appear here.

The statistics quoted in this survey have been taken from the White Paper on *National Income and Expenditure 1954-55*, the Acting Commonwealth Statistician's *Monthly Review of Business Statistics*, January 1956, and the Commonwealth Bank's *Statistical Bulletin*, February 1956.

cost, and their replacement by the attitude that whatever we produce can be sold at any price.

In the middle of 1952, Australia entered a period of price stability such as we had not known since the end of wartime price stabilisation. In the two and a half years between September 1952 and March 1955, the "C" series of retail prices rose by only 5 per cent—an annual rate of 2 per cent. In the previous two and a half years, between March 1950 and September 1952, the series had risen by 50 per cent—an annual rate of about 18 per cent. Recently, however, this price stability has begun to crumble. Table II shows how the rate of price increase has moved up from less than 1 per cent in 1954 to over 4 per cent in 1955.

It is interesting to compare what happened in the great inflation of 1950-52 with what has been happening recently. This can be examined through movements in the shares of gross national product received by various groups and in price and wage indexes.

TABLE I

Shares of Gross National Product, 1948/9 to 1954/5

Income Payments	1948/9	1949/50	1950/1	1951/2	1952/3	1953/4	1954/5
	%	%	%	%	%	%	%
Farm income	14·4	16·5	21·2	11·6	13·9	11·8	9·7
Wages, salaries, forces	46·8	44·5	41·5	49·2	48·5	47·8	48·0
Other private income—							
Uninc. businesses	10·0	9·7	9·3	10·3	9·9	9·9	10·1
Company income	9·4	9·4	10·7	10·0	9·0	9·9	10·4
Depreciation allowances ..	4·2	5·6	5·3	4·0	4·6	5·3	6·0
Rent and interest	5·0	4·5	3·6	3·7	3·9	4·1	4·4
Sub-total	28·6	29·2	28·9	28·0	27·4	29·2	30·9
Surplus, public trading ..	·4	·3	·2	·3	·4	1·0	1·1
Indirect taxes *less* subsidies ..	9·8	9·6	8·2	10·9	9·8	10·2	10·3
Gross National Product ..	100	100	100	100	100	100	100

In the 1950-52 inflation, the leading factor was the rise in export prices which carried farm income up to 21 per cent of gross national product, largely at the expense of a fall in wages to 41·5 per cent. A more normal relationship was restored by Court action to raise nominal weekly wages (through an increase of £1 in the basic wage and through the automatic adjustment of the basic wage to the "C" series) and by the fall in export prices. Average weekly earnings more or less kept pace with the rise in nominal weekly wages. The share of "other private income"—which may be regarded as a version of the gross profit margin—remained fairly stable through this period. (The case for an exchange appreciation in the 1949-50 period is that it could have achieved most of the required readjustment between

wages and farm incomes without the price inflation which accompanied the method of wage increases which was in fact used.)

The recent resumption of inflation has sprung from different sources. Export prices and farm incomes have been falling. The share of wages and salaries in gross national product has remained fairly stable. Other private income has however made a substantial upward movement.

TABLE II

Price and Wage Indexes

Period	Percentage change from one year earlier				Ratio of earnings to nominal wages
	Export Prices	"C" Series	Nominal weekly wages	Average weekly earnings	
	%	%	%	%	(1952/3 = 100)
1949–50	+15·4	+ 9·2	+ 8·9	+ 9·7	101
1950–51	+70·8	+14·2	+20·1	+19·8	100
1951–52	−27·7	+22·6	+22·1	+23·1	101
1952–53	+ 2·1	+ 9·1	+10·6	+ 9·5	100
1953–54	− 1·9	+ 2·8	+ 3·3	+ 4·9	102
1954–55	− 9·1	+ 0·8	+ 1·3	+ 4·6	105
Dec. Qr., '54 ..	−11·0	+ 0·3	+ 0·9	+ 3·2	108
Mar. Qr., '55 ..	− 7·4	+ 1·0	+ 1·7	+ 4·3	99
June Qr., '55 ..	−10·3	+ 2·2	+ 2·1	+ 7·1	108
Sep. Qr., '55 ..	−11·1	+ 3·9	+ 2·7	+ 6·6	108
Dec. Qr., '55 ..	− 8·4	+ 4·4	+ 3·5	+ 7·0	112

This has been, in fact, a domestic inflation, with high levels of domestic expenditure not only making it possible for producers to secure higher profits (from rising turnovers and higher prices), but also leading to competitive bidding for labour. The number of vacancies registered with the Commonwealth Employment Service has been high in relation to the number of persons registered as unemployed. The ratio of earnings to nominal wages, reflecting in particular over-award and overtime payments, has risen substantially. These inflationary manifestations are likely to be aggravated by the efforts, inevitable in the circumstances, of trade unions to secure higher award rates.

Increases in expenditure have come from all sectors of the economy. The population has been rising rapidly, with high rates of natural increase and a great increase in immigration from its recession level of 1952/3. Investors have been exploiting a wide range of opportunities for industrial development and providing the extra capital equipment needed by the rising population. Commercial building is booming. Businessmen are building up stocks after having unloaded them during the 1952/3 recession. People are building houses and buying motor cars at a high rate. Consumption has been stimulated by the switch of income from farmers, mostly at the expense of their

savings, to people who spend most of their incomes; and, presumably, by the increased availability of goods and services at fairly stable prices. Public authorities have been trying to increase their provision of public services and works. Ample finance has been available for all this expenditure because of high levels of current income, of bank advances and of hire-purchase finance, because of the ease with which money could be raised on the market and because of Commonwealth Bank purchases to support the bond market.

This big increase of expenditure has occurred until recently without provoking any substantial increase in prices. It has been accompanied by an abnormally large increase in supplies. There appears to have been a substantial and unusual increase in productivity and a large increase in the supply of imports, made possible by heavy overseas borrowing and substantial drafts on our overseas reserves. Even with this large increase in available supplies, however, the recent resumption of more substantial rates of price increases suggests that there is excess demand pressing on the economy.

It has now become necessary to cut back imports, and therefore the rate of increase of domestic supplies, in order to protect our international reserves. While there have been signs of some abatement in the rate at which expenditure is increasing, there are no grounds for believing that this would have been sufficient to bring expenditure back into equilibrium with available supplies.

It was in these circumstances that the Commonwealth Government, on 14th March, 1956, announced its new measures to attack the basic cause of rising prices by restricting expenditure. Without such measures, the rate of price increase must have risen well above its current 4 or 5 per cent a year. In this article, we shall first examine the state of the balance of overseas payments, of domestic supplies and of domestic expenditure, and shall conclude with a discussion of the Government's policy measures.

2. *The Balance of Payments*

The outstanding feature of our balance of payments in recent years has been the rise in imports. Imports had reached a peak value of £1,274 m. in 1951/2. The combination of import controls, reduction of stocks and slight recession reduced them to £677 m. in 1952/3. With the easing of import controls, they rose to £1,035 m. in 1954/5. During the first nine months of 1955/6, they have been running at an even higher annual rate. In part this rise has been due to our rising population and to the increase in our costs relative to costs overseas. Its effect on our external balance has been the more acute because a notable increase in the volume of export production—by about 20 per cent above the level of 1950/1-1951/2—has been more than offset by the fall in export prices.

These developments may eventually require corrective action through tariff and exchange rate policy. But as long as we are beset by the problem of excess domestic demand, I believe that the correct policy is to hold back the level of imports through the licensing control. While excess domestic demand persists, tariff and exchange rate adjustments would have to be carried to absurd lengths in order to limit our imports to what we can pay for. Moreover, until we can eliminate excess demand, it is impossible to judge what long-term adjustments need to be made in tariffs and the exchange rate. Finally, so long as excess demand persists, any beneficial effects of such adjustments are likely to be quickly swamped by continued domestic inflation.[2]

Recent movements in our balance of payments are set out in the following table.

TABLE III

The Balance of Payments

(£A million)

	1953–4	1954–5(*)			1955–6
		Year	First half	Second half	First half
Current Account					
Exports f.o.b.	811	762	359	403	381
Other receipts for goods and services	88	100	47	53	49
Total credits	899	862	406	456	430
Imports f.o.b.	683	847	391	456	413
Other payments for goods and services	154	188	80	108	94
Net income owed abroad ..	80	83	41	42	40
Total debits	917	1,118	512	606	547
Current balance	− 18	− 256	− 106	− 150	− 117
Capital Account—					
Public and private borrowing ..	28	114	41	73	62
Movements in international reserves	+ 10	− 142	− 65	− 77	− 55

In June, 1954, our international reserves stood at £570 m., 62 per cent of our total debits in the financial year then ending. By June, 1955, our reserves had fallen to £428 m., 38 per cent of total debits in that financial year. During 1955/6, the flow of imports and the drain on international reserves has continued with little abatement. If we

2. Some aspects of longer-term problems in our balance of payments are discussed by Lundberg and Hill, *infra*, pp. 28 ff.

3. Figures used for the year 1954/5 are from *National Income and Expenditure, 1954-55*. These have been slightly revised since but it has been thought best to use the White Paper figures.

lose another £100 m. this year, as seems likely, our reserves will be down to £328 m., less than 30 per cent of our current flow of debits.[4] While no one will say what our international reserves should be,[5] everyone seems to regard this as a relatively low figure.

It is this drain on international reserves which the Prime Minister undertook to stop, through import controls, by the end of this financial year, an aim which, in his recent statement, he said "there is every reason to suppose . . . will be achieved."[6]

The basis for this supposition is, presumably, that imports, f.o.b., will shortly fall to the target figure of about £55 m. a month. There is little sign of them doing so yet, despite the tightening of controls late in 1954 and again early in 1955, but it is to be assumed that the import restrictions announced in October, 1955, will become effective during the June quarter of this year. It is apparently expected that, assuming no substantial change in our export situation, the current balance in 1956/7 will be along these lines:

	£A m.
Exports f.o.b.	750
Other receipts for goods and services	100
Total credits	850
Imports f.o.b.	660
Other payments for goods and services	190
Net income owed abroad	90
Total debits	940
Current balance	–90

This would leave £90 m. to be raised abroad by public and private borrowing. In view of the fact that such borrowing has averaged nearly £100 m. a year over the last eight years, this does not seem an impossible target. As the Prime Minister said, when announcing the new policy measures: "I hope that no Honourable Member will think that the measures I am tonight announcing will discourage the investment of capital in Australia from overseas. On the contrary, we have every reason to believe that a continuing inflation discourages overseas investment but that a clearly demonstrated determination to produce internal stability encourages it."

I conclude that, so far as it is possible to speculate about the balance of payments, equilibrium appears to be in sight, at the expense

4. On March 21, 1956, that section of our international reserves held in the form of gold and balances held abroad by the Commonwealth Bank stood at £269 m. In the first nine months of the current financial year, these reserves have fallen by £105 m., compared with a loss of £103 m. in the corresponding period of 1954-55.

5. See D. G. Badger: "Australia's Holdings of Gold and Foreign Exchange", *Economic Record*, May, 1955, pp. 25 ff., for a discussion of the adequacy of reserves.

6. *Economic Measures:* Statement by the Prime Minister, 14th March, 1956. (Commonwealth Printer, Canberra, F. 1745/56.)

of a reduction in imports, f.o.b., from £869 m. in 1955 to a target figure of £660 m. We have, however, no reason to be complacent about the instrument of import licensing by which this reduction is being brought about. In their article on long-term balance of payments problems, published elsewhere in this issue, Professor Lundberg and Mr. Hill draw attention to the great disadvantages of having restrictive import regulations over long periods.[7]

3. *Domestic Market Supplies*

The state of our balance of payments is important in determining the extent to which we have to draw on our international reserves in order to meet our current debits. But it is also important in determining the impact on domestic market supplies of the balance of our imports and exports. This is brought out in the following table.

TABLE IV

Domestic Market Supplies

	1953/4	1954/5	Change
	£m.	£m.	£m.
Gross national product			
Non-farm	4,020	4,364	+ 344
Farm	540	468	− 72
Total	4,560	4,832	+ 272
Imports, etc.	837	1,035	+ 198
Less exports, etc.	− 899	− 862	+ 37
Domestic Market Supplies	4,498	5,005	+ 507

The value of non-farm gross national product rose by 8½ per cent in 1954/5.[8] Farm incomes fell, partly on account of lower world prices for our exports and partly because of higher domestic costs incurred by farmers. The value of imports, however, has soared. In total, our domestic market supplies increased by £507 m., or by about 10 per cent.

7. *Infra*, pp. 42-44.

8. Despite the strictures of the Acting Commonwealth Statistician (S. R. Carver: "Indexes of Volume and Quantum," *Economic Record*, November 1954, p. 274) and others, it is difficult, in a year when prices appear to have been nearly stable—the 'C' series rose by less than 1 per cent—to resist the temptation to comment on the real significance of this increase in the money value of product, excluding unincorporated farms. Since employment increased in this period by about 3 per cent, it appears that non-farm productivity must have risen by nearly 5 per cent. The increase between 1952/3 and 1953/4 appears to have been of the same order of magnitude. If these figures appear surprisingly high, they are at least not inconsistent with productivity estimates that might be derived from Dr. Campbell's statistics of rural and factory output (*infra*, p. 120) and with Professor Lundberg's and Mr. Hill's estimates of real gross national product (*infra*, p. 49). It should be pointed out, however, that there is no evidence that productivity was increasing at anything like this high rate in earlier years. It may result from a combination of the easing of shortages and bottlenecks in these two years and the coming to fruition of important long term improvements in capital equipment.

In the current and next financial years, we cannot plan on an increase in non-farm product, given full employment, any greater than the large increases secured over the last two years. Employment is continuing to rise at the rate of almost 3 per cent a year. The *A.N.Z. Bank Production Index* records an increase in the volume of factory production of about 9 per cent in the five months July to November, 1955, compared with the same period in 1954. Farm incomes and the value of exports may fall further, though in both cases the falls should be smaller. The big difference will be in the supply of imports. We have shown that Government policy is apparently designed to reduce imports, by 1956/7, by £185 m.

Putting these anticipations together, it would surely be rash to base policy decisions for the current and next financial years on the assumption that the real increase in domestic supplies will be any more than about half of what it was in 1954/5.[9]

4. *Domestic Market Expenditure*

Sources of Demand

The pattern of demand that has been operating in the economy in recent years is brought out in the following table.

If we compare the last five years as a whole with 1938/9, the most notable change is the substantial increase in capital formation which we have been undertaking in recent years. This has of course been an important source of inflationary pressure. But that does not necessarily mean that, therefore, we should now cut it back to pre-war levels. In 1938/9 population rose by only 1 per cent and we had an economy which many regarded as comparatively stagnant as far as productivity increases were concerned. Over the last five years, population has been increasing by about 2½ per cent a year (nearly half on account of the high levels of immigration which have been promoted and maintained as a result of deliberately chosen government policy).

9. The following figures are based on the assumption of continuing full employment, with productivity and price rises as in 1954/5 and achievement of planned import reductions. (In fact, price increases are already well above the 1954/5 rate. But the analysis of demand and supply changes is simplified by leaving out changes in the rate of price increase which, so long as they are fairly small, should affect both demand and supply similarly.)

Estimated Change from Previous Year

	1955/6 £m.	*1956/7* £m.
Non-farm G.N.P.	+370	+400
Farm G.N.P.	—40	—10
G.N.P.	+330	+390
Imports, etc.	—55	—130
Less exports, etc.	+10	—
Domestic supplies	+285	+260

TABLE V

Allocation of Resources

(Percentages of gross national product)

	1938/9	1950/1 to 1954/5	1952/3	1954/5
	%	%	%	%
Current Use				
Consumption	71·4	62·0	61·5	65·3
Public Authorities—				
Defence	1·4	3·9	4·9	3·6
Other	5·2	6·1	6·3	6·3
Income owed abroad	4·2	1·5	1·5	1·7
Total Current Uses	82·2	73·5	74·2	76·9
Capital Formation—				
Fixed equipment—				
Public	6·3	8·9	9·3	8·5
Private[a]	12·4	16·6	15·1	17·2
Sub-total	18·4	25·5	24·4	25·7
Stocks	1·0	3·7	− 3·1	2·7
Total Capital Formation	19·7	29·2	21·3	28·4
Less overseas borrowing	−1·9	−2·7		−5·3
Plus overseas lending			+4·5	
Gross National Product	100	100	100	100

a. The components of private fixed capital formation were:

	1938/9	1950/1 to 1954/5	1952/3	1954/5
	%	%	%	%
Dwellings	3·1	3·9	3·7	4·0
Other construction	2·1	1·9	1·9	2·1
Trucks, cars, etc.	3·2	5·0	4·0	5·3
Other equipment	4·0	5·8	5·5	5·8
	12·4	16·6	15·1	17·2

Moreover, we have wished to increase our provision of capital equipment in order to take advantage of the many current opportunities for innovation and development which, we believe, will bring us higher living standards in the future. This increase of 9½ per cent in the proportion of our resources devoted to capital formation is no more than is necessary to secure these aims.[10] The phenomenon of a large range of attractive investment opportunities is being experienced in many countries and is leading to inflationary pressures even in countries with little or no population increase. Professor Lundberg has estimated[11] that Sweden is currently devoting 31 per cent of her gross

10. On the basis of a frequently assumed capital-income ratio of about 4: 1, the 1½ per cent increase in the rate of population increase, compared with pre-war, would require about a 6 per cent increase in capital formation. This would leave about 3½ per cent, enough to provide for about a 1 per cent rise in productivity over the pre-war rate of increase.

11. In an address to the Victorian Branch of the Economic Society, December, 1956.

national product to capital formation, although her population is practically stationary.

Public authority expenditure, notably on defence, has also risen. On the other hand, there has been a significant increase in the ratio of domestic supplies to gross national product, arising from two sources—first, service of our overseas debt (income owed abroad) is a much smaller percentage of our total product than in 1938/9; second, our overseas borrowing has risen in relation to our total product. Despite this greater availability of domestic supplies, the expenditure of private investors and public authorities has been so high as to force a substantial reduction in the percentage of total product available for consumption—a phenomenon common to most Western industrialised countries.

Looking at the figures for 1952/3 and 1954/5, the recent resumption of inflation appears to have been caused primarily by:

(i) a large increase—5·8 per cent—in the resources devoted to building up stocks. These were allowed to run down in 1952/3 but have been built up since;

(ii) an increase in private fixed investment which has more than offset the decline in public works;

(iii) an increase in consumption which is still, however, well below its pre-war ratio to gross national product.

Sources of Funds for Capital Formation

We get a rather similar picture, though from a different viewpoint, if we look at the sources of funds available to finance capital formation.

TABLE VI

Sources of Capital Funds

(Percentages of Gross National Product)

	1938/9	1950/1	1951/2	1952/3	1953/4	1954/5
	%	%	%	%	%	%
Personal savings*	3·7	12·7	9·1	12·1	8·1	5·5
Other private savings†	10·4	12·0	8·9	8·7	11·1	11·6
Government current surplus ..	3·7	5·3	8·8	6·0	6·9	6·4
Marketing authorities and public capital transfers	—	3·5	− 2·1	− 1·0	− 0·9	− 0·4
Overseas indebtedness	+ 1·9	− 3·1	+15·2	− 4·5	+ 0·4	+ 5·3
Total capital formation ..	19·7	30·6	39·9	21·3	25·6	28·4

* Includes farm stocks. † Undistributed profits, assurance funds and depreciation allowances

Over recent years, there has been a heavy decline in personal savings, presumably due mainly to the fall in incomes of farmers who have tended to maintain their consumption of the expense of their earnings. Other private savings have risen. The government's surplus

on current account was at its peak in 1951/2—the year of the "horror budget"—but has declined since with reductions of taxation. (The recent tax increases should bring this surplus back nearly to the 1951/2 figure.) The dramatic change has been in our overseas borrowing. In 1952/3, we were able to devote 4½ per cent of our resources to reducing our overseas indebtedness. In 1954/5, we added nearly 5½ per cent to our available supplies by borrowing abroad.

Prospects for Demand

It is impossible to predict with any confidence what is going to happen to demand during the current and coming financial years. Yet if we are to have an economic policy at all, we must at least appraise current trends of demand, consider whether there are any reasonable grounds for expecting a reversal of those trends and try to estimate what government action is necessary to bring aggregate demand nearer to the desired target—that total expenditure should be high enough to maintain full employment but not so high as to provoke an intolerable degree of inflation. It is hopeless to expect perfection. If we can, through policy, do appreciably better than we would have without any policy, we should be satisfied for the present—and try to improve our sources of information so that we may do better in the future. In the last 25 years, our economy has at times been subject to inflation of prices at rates as high as 30 per cent a year; at others, 30 per cent of our resources have been unemployed. If we could, by policy, keep the economy within the range between full employment with stable prices and a price inflation of, say, 5 per cent a year, we should at least be doing substantially better than we have in the past. This objective is, I believe, within the range of our economic skill and political courage.

The broad indications appear to be that most sections of demand have been continuing to increase at much the same rate as in the last two years. There have been some signs of a slackening of demand in some sectors. There are no grounds for believing that, in the absence of any change in governmental policy, excess demand would have been eliminated and price increases checked.

The most convincing evidence is the gathering rate of price increase mentioned earlier. In the March quarter of 1956, the "C" series of retail prices was 4·9 per cent higher than in March, 1955. There is a variety of evidence dealing with particular sections of demand. *The Treasury Information Bulletin* discusses at some length industrial activity and the state of trade in the last six months of 1955.[12]. Private investment in plant and equipment, new factories and

12. *Treasury Information Bulletin*, No. 1—January, 1956. 267/56 (Commonwealth Government Printer), pp. 10-12.

buildings other than houses, and motor vehicle registrations all rose substantially. Investment in new houses was approximately stable.

An increasing population is an important source of increasing demand. In the six years since 1948/9, total population has increased by nearly 16½ per cent to 9·2 millions. The natural increase has risen gradually from about 100,000 a year to 122,500 a year. Net migration was at its peak (161,000) in 1949/50. It sank to between 50,000 and 60,000 in 1952/3 and 1953/4 but is rising again. In 1954/5, the figure was 91,473. In the first six months of 1955/6 net migration was 51,474.

Retail trade has been expanding but at a somewhat lower rate than last year. Retailers in Sydney report a 3 per cent increase in sales for the period July to December, 1955, compared with a year earlier. Melbourne retailers report an increase in sales of nearly 8 per cent for the first seven months of 1956/7 compared with 1955/6. The value of wholesale trade, as recorded under the Sales Tax Acts was 11½ per cent higher in the first five months of 1955/6 than in 1954/5.

Debits to accounts of private customers of banks show the same picture of a substantial, though slackening, rate of increase of turnover.

	Average of Weekly Debits	*Increase over Previous Year*
	£m.	%
1952/3	389·3	—
1953/4	446·5	+15%
1954/5	491·6	+10%
July-March, 1954/5 ..	484·2	—
„ „ 1955/6 ..	515·7	+6·5%

Personal consumption expenditure rose by £299 m. in 1953/4 and by £272 m. in 1954/5, increases of 12 and 9 per cent respectively. In both these years, it was in a fairly stable ratio to personal non-farm disposable income. If this ratio was maintained in the current and next financial years, consumption could rise by about £220 m., or 7 per cent, a year.[13]

Expenditure by public authorities has been rising less rapidly than other sectors of expenditure. There is however considerable pressure for expansion of expenditure on education, health and public works. The Prime Minister has pointed to the likelihood that expenditure in some fields must next year be substantially higher than in the current year.

13. Personal consumption in 1953/4 and 1954/5 was about 6 per cent higher than personal income *minus* personal direct taxes *minus* income of farmers. (Unfortunately statistics of taxes paid by non-farmers only are not available.) This is consistent with the assumption that farmers tend to keep their consumption fairly stable in the face of falling incomes.

One possibility of an easing of the rate of increase of demand may be found in a decreased rate of stock accumulation. In 1954/5, investors added £120 m. to stocks, £85 m. more than they added in 1953/4.[14] In view of the White Paper's comment that this increase "appears to be little, if any, greater than was necessary for facilitating the increased levels of production and trade"; and in view of the fact that the average annual addition to stocks since 1946/7 has been just £120 m., investors might be expected not to attempt to increase still further their additions to stocks.

Reduced supplies of imported goods may also lead to some abatement of the rate of increase of demand. If imports, particularly of plant, equipment, cars and so on, are not available, some potential purchasers may decide to defer their expenditure rather than to seek substitutes from Australian production.

Money Supplies and Finance

The volume of money has continued to expand, though at a slackening rate.[15] Bank advances are beginning to show the impact of continuing efforts at restraint. The Prime Minister stated that "we have reached the conclusion that the restriction of credit has gone as far as it reasonably could, and therefore that while present policies must be maintained they need not be intensified."

Major Private Banks: Advances

1952/3	£638·1 m.
1953/4	£658·5 m.
1954/5	£776·8 m.

	1954/5	*1955/6*
December	785·7	814·5
January	769·8	784·2
February	772·9	773·7
March	775·9	776·2

The recent big increase in new money raised by Australian companies listed on Stock Exchanges, and in the proportion raised through debentures, registered notes and deposits, is presumably the result of the increasing tightness of money.

14. The true figure appears to have been even higher than this figure given in the 1954/5 White Paper, which is expected to be revised upwards in the next edition.

15. The Commonwealth Bank *Statistical Bulletin*, February 1956, records the volume of money as: June 1953, £2,642 m.; June 1954, £2,814 m.; June 1955, £2,898 m. In March 1956, it was £2,986 m., compared with £2,933 m. in March 1955.

New Money Raised by Listed Australian Companies

	Share Capital	Debentures, Registered Notes and Deposits	Total
1954/5:	£m.	£m.	£m.
September Qr.	10·2	3·1	13·3
December Qr.	19·2	8·6	27·8
March Qr.	13·9	8·3	22·2
June Qr.	16·2	6·7	22·9
1955/6:			
September Qr.	13·5	18·3	31·8
December Qr.	n.a.	15·5	n.a.

Balances outstanding on hire purchase agreements entered into by finance companies (excluding retailers) have risen less during 1955 than during 1954. In October 1955, the finance companies promised the Prime Minister to limit the expansion of their business to 10 per cent. They have since, after some doubts, reaffirmed this promise.

Hire-Purchase Finance

	Balances outstanding at end of quarter	*Increase over previous quarter*
	£m.	%
March Qr., 1954	118·3	9
June Qr., 1954	131·0	11
Sept. Qr., 1954	142·9	9
Dec. Qr., 1954	159·9	12
March Qr., 1955	169·2	6
June Qr., 1955	179·2	6
Sept. Qr., 1955	193·7	8
Dec. Qr., 1955	206·9	7

In 1954/5, new agreements entered into by finance companies involved the financing of £154 m. Of this total, £109 m. was for motor vehicles, tractors, etc.; £6 m. for plant and machinery; and £39 m. for household and personal goods.

There is, then, some evidence of a tightening of money supplies which could have a damping effect on the tendency of demand to rise, particularly if it is now to be backed up by a reduction of the Commonwealth Bank's support of the bond market.

The Employment Situation

Total civil employment (excluding rural, household domestic and forces) was 2·74 m. in June, 1955, 3 per cent higher than in June, 1954. For the eight months ended February, 1956, employment was 2·7 per cent higher than in the previous year.

The Department of Labour and National Service reports on the labour market in March, 1956: "Employment continued at a high level during March. There were indications of a further easing in the strain on labour resources, although seasonal and transitory factors contributed to a decline in vacancies registered with the Commonwealth Employment Service (from 51,295 in February to 44,930 in March). A small increase in the numbers receiving unemployment benefit (by 366 to 6,494) was partly attributable to the effects of industrial disputes and bad weather, particularly in New South Wales. . . . Employment on construction works appears in the aggregate to have remained fairly stable in March, but there were fewer outstanding demands for building workers in most States."[16]

As a measure of labour turnover, the percentage of engagements to the average number of male manual workers, which fell from 8·9 per cent in March, 1949, to 4·8 per cent in March, 1953, had risen to 8·4 per cent in March, 1955. For September, 1955, however, the figure was 7 per cent, the same as in September, 1954.

A slight easing of the labour market early in 1956 is consistent with our earlier conclusions. The danger of inflationary pressure will become acute when the fall in imports becomes effective, which has not happened yet.

Aggregate Domestic Market Expenditure

Increases in domestic market expenditure in 1954/5 are shown in the following table.

TABLE VII

Domestic Market Expenditure

	1953/4 £m.	1954/5 £m.	Change £m.
Personal consumption*	2884	3156	+272
Public authorities	825	891	+66
Gross private investment—			
Dwellings	175	195	+20
Other new building	80	100	+20
Trucks, cars, etc.	210	256	+46
Other capital equipment	260	282	+22
Non-farm stocks	35	120	+85
Farm stocks	29	5	−24
Total	789	958	+169
Domestic Market Expenditure	4498	5005	+507

* Includes purchases of goods and services by financial enterprises.

We have suggested earlier that the real increase in supplies in 1955/6 and in 1956/7 is likely to be substantially less than—perhaps

16. Department of Labour and National Service: *Review of the Employment Situation,* March, 1956.

not much more than half—the increase of £507 m. in 1954/5. In view of the foregoing discussion of demand, and making full allowance for possible sources of abatement in the rate of increase of demand, I believe it would have been rash to base current policy decisions on any assumption other than that the rate of increase of demand was likely to outstrip substantially the rate of increase of supply. If nothing had been done to meet this situation, we must have expected an intensification of price increases and of shortages of labour and the goods and services available for sale.

5. *Economic Policy*

It is against this background of an expected continuance of excess demand that the Prime Minister's announcement of new economic policy measures must be considered.[17] The main features of his policy are:

(a) an increase in indirect taxes designed to raise £85 m. in a full year. These have been concentrated on expenditure which promotes a high level of imports (motor vehicles and petrol) and on less essential items of consumption (alcohol, tobacco and goods in the highest sales-tax bracket);

(b) an increase in company taxation designed to raise £30 m. in a full year. This is intended to impose a check upon investment spending "which although valuable is at present beyond the capacity of either saving or borrowing to provide"; and

(c) an increase in bank deposit and advance rates and an implication that the Commonwealth Bank's support of the bond market will be reduced.

This policy has been widely criticised—though it seems to have been accepted more calmly by the public as a whole than it has been by the press and the sections of opinion whose views it publishes. It is alleged that the Government has adopted a negative, repressive, unconstructive policy. Why does not the Government instead, these critics ask, take steps to raise production and exports, to borrow more overseas, to increase personal savings, to make workers work harder and longer? Why does the Government not cut its own spending? How can you cure inflation by measures which will raise costs and prices and lead to demands for higher wages?

These critics are at least on the side of virtue. Much the most positive, constructive and expansionist way out of our difficulties would be to produce more, to export more, to borrow more abroad, to save more, to work harder and longer. But in many weeks of public and

17. For an illuminating exposition of the Government's analysis of the current economic problem and of the content of and reasons for its new policy the reader should consult the Prime Minister's statement, *Economic Measures*, referred to earlier.

private discussion, I have not heard one single suggestion of any practicable act of public policy which would be likely to bring any of these things about quickly enough to help us in our present difficulties. And I can think of none myself.

Production

Socialised economies may be able to decide overnight to produce more and to work more effectively—although no one I know is convinced even of this. Our production is almost wholly a matter for private enterprise. Perhaps if we considered ourselves poor we would have a spur to produce more. But our present troubles stem from the fact that we think and behave as if we were richer than we are.

Governments—and their economic advisers—can influence the total amount of spending and the direction of that spending. But there is terribly little they can do, at least in the short run, to influence the total supply of home-produced goods and services in such a way as to raise still further its current apparently substantial rate of increase. It is claimed that they can repress productive effort through excessive and unwisely chosen taxes. But no convincing case has been made to prove that Australia is suffering in this direction. Governments can do a lot to help the development of a sound and efficient production structure. We should not underrate what has already been achieved by Australian governments through their public works, their overseas borrowing, their agricultural and industrial research, their overseas marketing activities, their technical and general education activities and so on. There is certainly room for improvement and expansion in all these activities with consequential benefits in years to come. But our immediate difficulties have to be tackled in a matter of months.

Savings

One suggestion that has been discussed recently is that more could be done to encourage savings. Many socio-economic groups have never, in the past, received incomes high enough to permit them to undertake anything but, at most, a small amount of contractual saving. Many individuals in these groups are now receiving much higher real incomes. They may be in a position where they could save more but have not had the opportunity to develop saving habits. Moreover the type of securities readily available today have been developed for other groups of savers. It may be that this group of potential new savers requires both different inducements and different securities.

There is a fertile field for investigation into saving habits and channels.[18] Should securities of the war savings certificate type be revived? They could be designed to be always convertible to cash at

18. See *infra*, pp. 106 ff, for a discussion of the possibility of obtaining information on the savings habits of various sections of the community.

their face value, but could bear interest at low rates if cashed soon after issue and at much higher interest rates if held for a long period. Should the redemption value of some, or all, securities be varied, fully or in part, with an index of retail prices? Should the Australian passion for gambling be exploited by adopting some type of lottery bond such as exists in some overseas countries? Should the basis of assessment for direct personal taxes be shifted, wholly or in part, from income to expenditure?[19] Can trade unions be induced to encourage workers' savings and to take part of future wage increases in the form of contributions to welfare, pension and guaranteed-wage funds? Such funds have recently been making an expanding contribution to savings in America. Should age pensions and other cash social service benefits be freed of the means test which, at present, removes much of the benefit which low income groups might derive from saving? Should a national superannuation scheme be introduced?

It is often said that we cannot afford to pay higher wages because workers do not save and any wage increase will, therefore, add to inflationary pressure. This conflict between equity and economic equilibrium could be reduced if workers developed saving habits. The case for higher wages could then be considered more on its own merits. At present it is bedevilled by the fear that, if wages are increased, it will involve a switch of income from sections with a high propensity to save to sections with a low propensity.

The Government has not, so far, shown any interest in positive action to encourage savings. No one has suggested that a ½ per cent rise in interest rates would have this effect. Equally, no one has enquired whether a substantial rise in the rate, coupled with suitable conditions, might not have a beneficial effect.

Government Expenditure

Nor has the Government, so far, made any concession to the popular view that the solution to all our difficulties could be found by a cut in government expenditure. I have no doubt that there is some room for economy in government expenditure—just as there is in the expenditure of all private businesses and individuals—although far less than loose criticism suggests. Do we really want still worse roads, power and transport services, schools, universities and hospitals than we already have? We are one of the four or five richest countries in the world. It would be embarrassing to say where we would probably come in a ranking of countries according to standards of public services. In any case, the fact is that the Government believes that it has sufficient political strength, and that its expenditures are sufficiently

19. See N. Kaldor: *An Expenditure Tax* (George Allen & Unwin Ltd, London, 1955).

defensible, to refuse to cut them. Unless these critics can, in the first place, find a way of getting the present Government out of power and, secondly, find an alternative Government which would be likely to spend less rather than more, we still have to find a way of attaining an economic equilibrium which will accommodate present government expenditures. In just the same way, it is certainly useful to criticise present levels of immigration—in both cases, the criticism helps to ensure that the Government keeps a more careful watch on its activities, both in spending money and in promoting immigration. But unless the Government does cut immigration, which it shows no sign of doing at present, we have also to accommodate ourselves to a high rate of population increase.

Private Expenditure

In the end, the Government has chosen the one form of policy left to it—the discouragement of private spending by higher taxes and interest rates. The significance of the new economic measures, as they are intended to operate, is discussed under the following headings.

(a) *Some prices are intended to rise*

Prices of a number of goods will be induced to rise by the increased indirect taxes. The total sales value of alcohol, tobacco, petrol, private cars and the less essential goods subjected to the 25 per cent rate of sales tax is about £900 m. If £82 m. extra indirect taxes are levied on these goods, they will rise in price by at least 9 per cent. Spread over all consumer purchases, this represents an increase of about 2½ per cent in retail prices generally. The "C" series, which underweights the particular goods taxed, should rise less.

(b) *These should be "once-for-all" price increases*

If producers raise prices under the stimulus of excess demand, their higher sales receipts will either be paid out by them in higher wages and other costs or will swell profits. In any case, the extra receipts are available for respending, thus adding to excess demand and stimulating further price increases. This is a self-sustaining process of inflation.

With tax-induced price increases, the extra receipts go into government revenue and increase the government's surplus on current account. The money will of course be spent by governments *but it will not add to incomes.* Part of government expenditure which would otherwise have been financed by the Central Bank will now be financed by tax-imposed savings. These price increases are intended to be "once-for-all" increases, and should not set off an inflationary price spiral.

(c) *The real demand for goods and services should fall*

The total money income of consumers will not be increased as a result of the extra taxes. But with an increase of some 2½ per cent in retail prices, their real demand for goods and services should be reduced correspondingly. This reduction in real demand will be the greater:

(i) the more consumers maintain their purchases of the goods subject to the higher taxes—and the goods have of course been chosen for taxing because the demand for them is highly inelastic; and

(ii) the less they reduce savings. Since the greater part of most consumers' savings is contractual and cannot be reduced (life insurance premiums, mortgage and hire-purchase repayments, superannuation contributions, etc.), the fall in savings should be small relative to the total new revenue raised. Moreover, some small investors are likely to be increasing their savings in an effort to compensate for increasing difficulty in borrowing money.

(d) *The level of employment should not fall*

The reduction in consumer demand is a reduction of excess demand and will, moreover, be accompanied by a reduction in the supply of imported goods. The demand for home-produced goods and, therefore, the level of employment should not in general be affected by this disinflationary process, though some patches of unemployment may develop, requiring workers to change to jobs in other industries.

The reduction in imports will be matched by a reduction of drafts on our international reserves. In terms of Table VI, we shall be supplying more of our capital funds from the government surplus on current account and less by increasing our overseas indebtedness.

As suggested earlier, it will ultimately be necessary to rely on tariff and exchange-rate policy, rather than on import controls, to ensure not only that demand is no higher than can be satisfied by the goods and services we can afford to import *plus* the goods and services we can produce at home, but also that enough of that demand is directed to home-produced goods to maintain full employment.

(e) *Higher company taxes should also reduce expenditure*

The higher taxes on commercial vehicles (about £3 m.), and that part of the increase in company taxes (£30 m.) which leads to a reduction in undistributed profits, is intended to reduce the effective demand of investors in a way similar to the effect described above of taxes on consumers.[20]

20. To the extent that companies raise prices in order to pass on to purchasers the higher tax on company profits, the company profits tax has an effect similar to the other indirect taxes discussed above.

The balance of the increase in company taxes will be paid at the expense of dividends. This may lead to some reduction in income-tax receipts and in personal savings. Such reductions would partly offset the increase in the government's surplus on current account which will result from the higher company taxes. For the rest, the reduction in dividends will lead to a reduction in consumption with effects as described above.

(f) *The abatement of Commonwealth Bank support of the bond market should be disinflationary*

The reduction of Commonwealth Bank support of the bond market is intended to check the "abnormal (and, in total, huge)" additions to the supply of money available to the public which have resulted from the Bank's purchase of bonds. As the Prime Minister said: "It would be self-contradictory for the Commonwealth Bank . . . to say with one breath to the trading banks that they must restrict credit and, after the next breath, to go on an abnormal scale into the market and create new money in order to buy bonds."[21]

If people go on trying to cash bonds, the withdrawal of Bank support of the market will lead to falls in their market value—falls which will be the greater, the more distant the bonds are from maturity. In so far as this encourages people to postpone expenditure, it is in present circumstances desirable and is, in fact, precisely the effect the bond market is supposed to have. In so far as certain individuals are forced to sell at a loss in order to meet commitments, it is unfortunate for those individuals. They are, I believe, relatively few.[22] The Federal Treasurer was completely right when he said that such people should have purchased rather the short-term bonds which the Commonwealth has been offering. This would, however, have been a more sympathetic statement if the Government had been more scrupulous, in its loan propaganda and its general economic policy, in making people understand the nature and purposes of the bond market.

The real point to be made here, in any case, is that inflation, aggravated by Central Bank finance to support the bond market, permanently and substantially reduces the real value of savings, while temporary variations in the bond market help to moderate inflation and to protect the real value of savings.

21. *Op. cit.*, p. 11. Despite the Prime Minister's well-known mastery of the English language, his choice of tenses should not be taken to imply that this is not just what the Bank has until now been doing, as a result of the Government's lack of an economic policy.

22. The late Prime Minister, Mr. Chifley, once remarked that whenever he tried to introduce any new financial measure, he found that the entire population of Australia was suddenly composed of widows and orphans.

(g) *Higher interest rates should be disinflationary*

Interest rates have been allowed to rise not so much because higher rates will make a useful and positive contribution to our problems, but rather because the rates which have been maintained until recently have been kept artificially low by highly inflationary support of the bond market by the Bank. Cheap money is a completely sound policy when demand is tending to sag below what is necessary to maintain full employment. In times of excess demand, all commodities are scarce and it is only adding to our difficulties to keep money artificially cheap. The Bank should be selling bonds in order to draw off spending power, not buying them.

The higher interest rates will have some good effects. They will directly discourage some investment expenditure by making it more expensive and therefore less attractive. It is unfortunately true that the greatest effect in this direction is likely to be in such fields as housing where, because of the long life of the asset, interest is a major cost. Two points should be made here. First, we should be made to face the fact that, in an economy where we are trying to maintain a high level of development expenditure, capital generally is scarce and must be paid for dearly. In particular, capital expenditure which yields its return only over long periods (such as housing) does less to raise productivity and living standards quickly than does capital expenditure which yields high returns in a short period. Secondly, if we accept that higher interest rates are generally useful but wish to abate their effect on particular items such as low-income housing, the best policy is to subsidise such expenditure directly, as in fact has been done for many years under the Commonwealth-State Housing Agreement.[23]

The Prime Minister's statement deals effectively with other ways in which higher interest rates may help—by damping hire-purchase expansion, by encouraging the raising of funds overseas for the finance of international trade and overseas investment, and so on.

(h) *Higher income taxes would have made it easier to resist demands for higher wages*

To the extent that tax-induced price increases lead to successful demands for higher wages, salaries and profits, they will partly—but only partly—offset the effect of the Government's measures. Two points should be noted here. First, the more the Government succeeds in really skimming off excess demand, the less easy will it be for employers to yield to higher wage and salary demands and the more difficult will it be for them to take higher profits. Second, the Government and its

23. The Commonwealth Government is now proposing that interest on capital raised under this Agreement should be charged to the States at ¼ per cent less than the market rate. It is unfortunately also proposing to vacate the field of rental rebates. It is to be hoped that State Governments will continue this excellent scheme which has been admired and sometimes emulated overseas.

institutions, such as, above all, the Arbitration Court, would have been in a much stronger position to oppose demands for higher wages and salaries if the Government's measures had included an increase in income taxes. If those taxes had been increased, it could have been insisted that a measure of "equality of sacrifice" had been imposed on the whole community and each section could have been expected or asked not to try to avoid its share by passing it on to others. As it is, it is surely a little embarrassing to ask wage-earners not to demand higher wages to compensate for higher prices which affect practically all their incomes after tax, when higher-income groups are affected only on that much smaller proportion of their income after tax which they spend rather than save.

Obvious political considerations apart, some economic case could be made for not increasing income tax at present. The undesirable effect of such an increase on incentives and on personal saving might have been greater than will be the effect on the indirect taxes that have been imposed. But this argument does not in fact stand up. A 10 per cent increase in income tax would still leave us well below the level of personal tax *plus* social security contributions in New Zealand, the United Kingdom and the United States. The effect on incentive would, I believe, have been negligible. And even if an increase of income tax were paid partly at the expense of personal savings, there would still have been a net increase in the total of the Government's current surplus and personal savings.

The level of taxation in Australia, prior to the recently-announced increases, appears to have been low relative to New Zealand, United Kingdom and the United States, the only countries for which reasonably comparable statistics are available.[24] Table VIII shows the revenue raised in various forms of taxes as a percentage of gross national product in these four countries in recent years, together with figures showing the approximate impact of the new taxes in Australia. (No allowance has been made for the fact that the new taxes will fall on a gross national product substantially higher than in 1954/5.)

Total tax revenue as a percentage of gross national product, allowing for the taxes newly imposed in Australia, would be about the same as in the United States and significantly less than in New Zealand and in the United Kingdom.

But indirect taxes would be about the same percentage in Australia as in the United Kingdom, and much higher than in New Zealand and in the United States. Company tax is less than in any of the other countries. Income tax (8·2 per cent) is less than in New Zealand

24. On a slightly different basis of comparison, in Sweden indirect taxes are 9 per cent of personal incomes and direct taxes, 18 per cent, a total of 27 per cent. In Australia, the figures are 13 per cent and 9 per cent respectively, a total of 22 per cent.

TABLE VIII

Taxes in Various Countries

(Percentages of Gross National Product)

Government Revenue	Australia 1954/5		N.Z. 1953/4	U.K. 1954	U.S.A. 1954
	Actual	With new taxes			
	%	%	%	%	%
Indirect taxes *less* subsidies *plus* trading surplus	11·5	13·0	10·5	13·0	10·0
Direct personal taxes and social security contributions	8·2	8·2	11·8	9·5	10·5
Company taxes	3·7	4·2	5·0	5·0	4·8
Total government revenue ..	23·4	25·4	27·3	27·5	25·3

NOTES: Income owed abroad by Australia has been deducted from gross national product to make it comparable with overseas countries.
Employers' contributions to national insurance funds in the United Kingdom, and corporate social security contributions in the United States, have been included in indirect taxes so as to make them more nearly comparable with the inclusion of payroll tax in indirect taxes in Australia.

(13½ per cent), the United Kingdom (including personal social security contributions, 9½ per cent) and the United States (*ditto*, 10½ per cent).

(i) *The case for a lower rate of development*

Finally, there is the claim that the Government's policy is misdirected. We are trying, it is argued, to raise our population, our capital equipment, our productivity and our living standards at a higher rate than the economy can stand. The implication of this criticism is that we should abate the rate of immigration and, presumably, rely on monetary policy to reduce investment rather than on taxes to reduce consumption. This is at least a logical economic argument and certainly an important one to debate. But the debate must be political, for it is concerned with what we want. The economist will accept that this is a sound policy, provided that what we want is to consume more now and expand at a lower rate. If, however, we do want a high rate of expansion, then we must make sacrifices now—and these the Government's new policy measures are designed to bring about.

On this issue, my personal opinion is that we should grasp opportunities for development when they offer.[25] We have a great country to

25. It has been claimed, with reference to our immigration programme, that a rapidly rising population implies a permanent worsening of our long-term balance of payments problems. This claim is based on a more pessimistic view than mine of our long-term potentialities for expanding primary exports and import-replacing secondary industries. This expansion will be the greater, the more we succeed now in our twin objectives of expanding the appropriate avenues of investment and in eliminating the excess demand and labour shortages which are driving up our costs and hampering the establishment and development of efficient industries.

develop and at present we have a mind to develop it. It will be extremely difficult to recreate this mood when incipient depression offers us the opportunity of idle resources with which to carry out development. When governments and businessmen have many promising projects they want to carry out, it seems best to hold back consumption as much as possible and let them go ahead.[26] At some stage they are going to have fewer promising projects—that will be the time to allow consumption to expand.

For it is these developmental projects which are going to bring us higher living standards. If 4 per cent extra investment now is going to yield us a permanent 1 per cent addition to production, it will not take us long to make up for the temporary sacrifice of consumption needed to make the investment possible.

(j) *The impact on government finance*

Some of the discussion about the new economic measures has been in terms of the Government's budget, deficit and borrowing programme. This is merely another way of looking at the same problem. The Government should design its revenue-raising programme according to current economic conditions. If demand is inadequate to maintain full employment, it is foolish for the Government to depress it further by taxing and borrowing money away from people who might otherwise spend it. They should in these circumstances raise revenue from the Central Bank. But in conditions of excess demand, they should obtain as much as they can by taxing and public borrowing, regardless of whether they are already in surplus or not. In 1954/5, all but £108 m. of the total expenditure of £1,260 m. by all public authorities in Australia was financed out of tax revenues. Their surplus on current account (excluding capital expenditure of £415 m.) was £307 m. This may appear a fairly good achievement But in view of the fact that there was, nevertheless, a substantial pressure of excess demand, the surplus on current account should have been still higher.

26. It has been mentioned earlier that Australian consumption is currently a smaller proportion of gross national product than pre-war, and that this experience is common to most Western countries. The following figures show the position in Australia, the United States, New Zealand, and in eleven Western European countries (Austria, Belgium, Denmark, Finland, France, Western Germany, Italy, the Netherlands, Norway, Sweden and the United Kingdom). About 60 per cent of Australian expenditure on motor cars has been added to personal consumption expenditure, to make it roughly comparable with overseas countries.

	Australia	*United States*	*New Zealand*	*11 West European Countries*
Purchases of Goods and Services	1954/5	1954	1953/4	1954
(Percentages of gross national product)	%	%	%	%
Personal consumption	69	66	63	64
Public authorities and fixed private investment	33	35	34	35
Stocks	3	—1	—	1
Overseas investment	—5	—	3	—

6. *Conclusion*

The traditional method of curbing inflation has been to raise interest rates and to reduce supplies of money and credit. This may have worked in the past and it might work now—although it is difficult to judge because the situation is different and the evidence from the past confusing. There are two objections held today against reverting to this type of policy. In the first place, the axe falls primarily on investment and development expenditure. Secondly, the pulling back of investment has usually gone too far and caused depression.

So far as balance of payments equilibrium and price stability are concerned, this method might work. But its costs would be high. It would involve a lower rate of development and a less rapid increase of living standards. Much worse, the main cost could be inequitably distributed. A substantial section of the labour force might be unemployed, the rest of the community benefiting from lower and stable prices.

We are now engaged in what I regard as a heroic effort to establish a new economic order. We want to stay permanently on the brink of inflation. For the last sixteen years we have been permanently over the edge. We are trying now to get back to stability, without causing unemployment and without too drastic a cut in investment, by imposing most of the restraint on consumption. I hope we shall succeed for I do not like the alternative that faces us.

My general opinion is that the new policy measures will operate in the right direction and are of about the right magnitude—though they should have been introduced earlier and they should have included an increase in income tax. Economic prediction and the effects of economic policy are, however, highly uncertain. Economic activity is extremely sensitive to conditions at home and abroad.[27] The actual trend of economic events could admittedly make nonsense of our expectations. This is an argument for watching events closely and for being ready to adapt policy quickly to any apparently substantial and lasting reversal of trends. It is not an argument for refusing to design and implement economic policy on the best available evidence of what appears to be happening.

This is not one of the occasions on which "time will tell". By the time the new policy measures have worked their effect, many unpredictable things will have happened, making it difficult to judge whether the policy was right or not. We can never have *an* economic policy—we need flexible policies to suit changing economic circumstances. We

27. With Western Europe generally struggling to control an investment boom and incipient inflation, and with the United States about to embark on a Presidential election, overseas conditions appear unlikely to precipitate a recession in Australia. And there seems little likelihood that internal conditions would do so independently in the present situation.

have said that the path between inflation and depression is a difficult one to follow. But that it is eminently worth seeking cannot be doubted by anyone who has lived through the discomforts of 1950-52 and the far worse miseries of the early nineteen-thirties.

R. I. DOWNING

University of Melbourne.

AUSTRALIA'S LONG-TERM BALANCE OF PAYMENTS PROBLEMS

Australia's present balance of payments problems are usually studied in a short-term perspective. Estimates are made of the expected movement in exchange reserves from year to year and month to month by studying movements in export prices, evaluating the effects of import restrictions and guessing at capital imports. Such short-term analysis is of course necessary in order to follow developments closely and to settle the policy issues from month to month.

When analysing the factors which are influencing and determining the present balance of payments situation, however, longer-term perspectives also become necessary. It is important—not least for policy purposes—to know to what extent the balance of payments deficit during the last two years is due to accidental and temporary disturbances and to what extent it has its origin in more fundamental factors giving rise to long-term discrepancies.

Distinctions of this type are of course rather vague and cannot be pressed too far. They are, however, useful for pedagogic purposes especially with regard to policy issues.

1. *Short-Term and Accidental Factors*

Among the short-term or more or less accidental factors which could be contributing to the present balance of payments disequilibrium are the following:

(i) *Low Terms of Trade*

Sharply fluctuating export prices in relation to import prices have caused large and frequent disturbances to Australia's balance of payments in the past and, since 1953/54, the terms of trade have fallen by about 20 per cent. However, it cannot be said that the present terms of trade are unusually low—in relation either to past levels or to future prospects. Table II of the Appendix shows that at the end of 1955 they were about 4 per cent higher than in the second half of the 1930's and only 10 per cent lower than in the second half of the 1920's, which is usually considered to have been a favourable period for primary producing countries. Looking to the future it would seem that the terms of trade are at least as likely to fall further in the coming years as they are to rise.

(ii) *Low Volume of Exports*

Is some part of the current balance of payments disequilibrium due to an accidentally low volume of exports? Once again it would

seem that the present position is relatively favourable. After increasing little in the previous 20 years, the volume of exports has risen since 1950/51-51/52 by something like 25 per cent. This is due largely to a succession of remarkably good seasons, the elimination of rabbits, and heavy investment in rural industries. With the present high level of expenditure on long-term rural projects—particularly pasture improvement, erosion control and water conservation—the volume of exports can be expected to continue to increase, but it seems unlikely that the recent rate of expansion will be maintained.

(iii) *Low Capital Imports*

A third short-term factor which could be affecting the current balance of payments position is an unusually low rate of capital inflow. As can be seen from Table I, the variations from year to year in capital imports are very great. However, net capital inflow has averaged about £75 million a year over the post-war period, and this rate is being fairly well maintained. While it could change quickly, there seems little reason at present for considering it abnormally low.

(iv) *High Volume of Imports*

If we consider the current volume of exports, the terms of trade and capital movements more or less "normal" what about imports? The current volume of imports can be regarded as relatively high from two short-term points of view. First, the latest restrictions introduced in October 1955 have not, at the time of writing, affected actual imports. To the annual rate of imports of £825 million in the first half of 1955/56 corresponds an estimated rate of £650 million when present restrictions are fully effective. However, this concept of the level of imports under effective regulations is not of great interest for long-term analysis when, in order to measure the extent of external disequilibrium, we have to try to decide how high imports would be without physical controls.

The second factor which suggests that the current volume of imports is relatively large is the high level of expenditure within the Australian economy. The inflationary boom with excess demand for goods and labour that has developed in the last two years may be regarded as a short-term factor explaining some abnormal or extra needs for imported goods.

There is no basis for judging the order of size of this extra demand for imports caused by internal inflation. The marginal propensity to import cannot very well be ascertained during the post-war period, when no two years have been free from serious disturbances; until 1951 the supply of imported goods was inelastic and there was a simultaneous restocking boom and, since then, years with

heavy import restrictions have alternated with years in which new import controls have been anticipated.

However, if we make enough assumptions we can invent an arithmetical example. If the inflationary gap in 1954/55 was of the order of £200 million—in the sense that this sum represents the *ex ante* excess expenditure that tended to come about under the existing conditions but was only partly realised—and if the marginal propensity to import is 50 per cent (to be compared with an average propensity of about 20 per cent.)[1] then this inflated demand for imports would be £100 million. Much of this excess demand for imports would refer to plans to increase stocks.

We have suggested then that of the short-term factors which could be affecting the current balance of payments situation the terms of trade, the volume of exports and the rate of capital inflow are all more or less normal. The demand for imports, however, is relatively high, due mainly to the spilling over of excess demand.

2. *Long-Term and Structural Factors*

It can of course be discussed whether the degree of inflation that Australia has had in the last two years is not rather "normal" from the viewpoint of post-war experience and what can be expected in the future. But whatever one's opinion as to the frequency of future years of inflation, it is necessary for purposes of analysis to try to isolate the short-term inflation factor and to decide how large the volume of imports (and exports) and the deficit in the balance of payments would be without inflationary pressure in the economy. In other words, how close to external equilibrium would a successful anti-inflationary policy bring Australia? And if the balance of payments would still be in deficit, even with internal balance and with the other above-mentioned factors at what can be considered normal levels, what factors of a long-term or structural nature are responsible for this situation?

Potential Long-Term Disequilibrium

Our first and most difficult problem in trying to determine whether there is a fundamental disequilibrium in the balance of payments and if so, how large, is to decide what is the "normal" level of imports—i.e. what imports would be if there were no import restrictions, if the

1. It should be emphasised that there is little foundation for this assumption. In an inflationary situation with over-full employment the marginal propensity to import tends to be close to 100 per cent in all those sectors of the economy where the capacity of home production is fully used; any additional demand can only be met by increased imports. However, the pressure on capacity will always vary for different types of activity, prices may rise instead of more imports coming in, the time lag of reaction will vary, shifts in demand will occur, and so on. For the argument above it is enough that the marginal propensity to import with inflated demand is significantly higher than the average long-term propensity when there is internal balance in the economy.

internal economy were in reasonable balance, and if there were no abnormal stock movements.

Unfortunately, all of these conditions have not applied in any post-war year. Prior to 1950/51 imports were restricted by the difficulty of securing supplies, particularly in the United Kingdom, and by shortages of shipping. Imports from the dollar area were of course subject to direct control. Although there was some inflationary pressure, and stocks were being built up, it seems fairly certain that imports in these years were below what we might consider a normal level.

In 1950/51 and 1951/52 there was rapid inflation in Australia, with retail and wholesale prices and average earnings rising by between 40 and 50 per cent in the two years. At the same time accumulated import orders were being fulfilled and stocks were being built up. These factors all suggest that imports were above normal, particularly in 1951/52.

In 1952/53 all of the above factors were working to reduce imports. General import licensing had been introduced in March 1952, there was some deflationary pressure, and stocks were run down. Imports in 1952/53 must have therefore been much below normal. The sharp fall in imports and the resulting balance of payments surplus made possible a progressive relaxation of import restrictions. The following figures show the relaxations and subsequent tightenings for goods subject to restrictions administered on a quota basis.

Quotas as a Percentage of Imports in 1950/51

		"A" Category	*"B" Category*
1952	March	60	20
1953	April	70	30
	July	80	40
	October	90	50
1954	April	No quota restriction	60
	October	100	60
1955	April	85	40
	October	75	30

In 1953/54 the domestic economy was in reasonable balance, although in the latter part of the year there were signs of re-emerging inflationary pressure and externally we were enjoying unusually favourable terms of trade. The increases of 1 per cent in the "C" Series index and 4 per cent in average wage earnings were the smallest since 1945/46, while the fall of 2 per cent in the wholesale price index was the first decline since 1938/39. This relative stability of prices and wages accompanied a high level of employment, the number of persons on unemployment benefit falling during the year from 26,000 to 6,000.

With the economy in reasonable balance in 1953/54, there was little change in the volume of stocks. However, the third condition of

"normalcy" in relation to imports—no quantitative restrictions—was absent. Although import restrictions were much less severe than in 1952/53, it is clear that they were still effective in keeping imports below the normal level. The extent of the restraint is impossible to estimate, but if we assume a lag of six months between the issue of licences and the arrival of imports, the average quotas for goods arriving during 1953/54 would have been 75 per cent of 1950/51 imports for "A" goods and 35 per cent for "B" goods. Actual imports in each of these categories in 1950/51 were in the vicinity of £200 million. The 1953/54 quotas of 75 per cent and 35 per cent would therefore suggest that imports of "A" and "B" category goods which were licensed to arrive in that year were nearly £200 million less than in 1950/51.

This is not necessarily a measure of the effectiveness of import restrictions in 1953/54, because of transfers of goods and licences between categories and the fact that, with strong excess demand and an accumulation of stocks in 1950/51, imports of these goods might have been considerably in excess of normal requirements. On the other hand real import needs would have increased in the three years, and import prices had risen by nearly 5 per cent. Although it is impossible to evaluate these factors, it does not seem unreasonable to assume, from the scanty information available, that they might explain nearly half of the above figure; in this case the effective restraint of import restrictions in 1953/54 would have been of the order of £100 million. "Normal" imports would have then been something like £780 million, instead of the actual £683 million.

"Normal" import requirements must have increased since 1953/54, with rising production, population and incomes. Any estimate of the rate of increase must be hazardous, but real gross national product and real national income are probably increasing by about 5 per cent a year. In the past import demand has increased at about the same rate as real product and income, and it seems probable that this parallel growth has continued in recent years. If this is so, the £780 million "normal" imports in 1953/54 would have grown to £835 million in 1954/55 and £895 million in 1955/56 (assuming a 5 per cent increase in volume and 2 per cent increase in import prices in each year). When allowance is made for the effect of import restrictions, the spill-over of excess demand and stock movements, these figures seem plausible in relation to actual imports of £846 million in 1954/55 and expected imports of about £800 million in 1955/56.

If wool prices remain at recent levels, the value of exports and gold production in 1955/56 seems likely to be in the vicinity of £775 million. This estimate would be very nearly the same if present wool prices had ruled for the whole year (prices fell at the beginning

of 1955/56 but then recovered somewhat). As there are no abnormal factors affecting the estimates for other export products in 1955/56 very appreciably, and we are assuming that the present terms of trade are more or less normal, we can probably take £775 million as a fairly normal export income.

With exports and gold production at £775 million and imports at £895 million the trade deficit would be £120 million. To this has to be added something over £200 million for invisibles (£190 million in 1954/55, plus increases in freights and some other payments), giving a deficit on current account of about £330 million. It is reasonable to assume that some part of this deficit would be covered by capital inflow. Included in the net invisibles is about £30 million of unremitted profits, and direct investment and official borrowing can probably be expected to continue to provide something like £50 million a year, making total capital inflow about £80 million. The result of this hypothetical calculation is that without import restrictions reserves might be running down at an annual rate of about £250 million.[2]

The above estimate of the potential demand for imports at current levels of prices, production and employment in Australia—but with no more inflationary pressure than there was in 1953/54—should give a rough measure of the relative size of the external disequilibrium. The figuring suggests that even if the whole or most of the inflationary pressure is eliminated by effective monetary and fiscal policy—but full employment kept at the rates of the year 1953/54—there will remain a balance of payments deficit corresponding to nearly one-third of the current value of exports or about 5 per cent of gross national product.

The Long-Term Trends

If we were correct in suggesting that there are no important short-term or cyclical factors affecting the present balance of payments position, then this measure of external disequilibrium must be interpreted as being of a long run or structural nature. The tables in the Appendix should give some idea of the general long run tendencies.

Table III gives 5-yearly averages of the value of imports (c.i.f.) and exports (f.o.b.) in relation to gross national product. One of the most interesting features of the table is the long run stability in the average *import propensity*—20 per cent in 1910/11—1914/15, 18 per cent in the second half of the 20's, and 21 per cent in the years 1950/51—1954/55. On the above estimate of normal import demand the relation would now be about 19 per cent. It is only in the 1930's that the average propensity deviates considerably from what appears to be a fairly "normal" ratio of 18-20 per cent. For the first half of

2. It should be noted that if reserves were in fact running down at anything like this rate, capital inflow would probably be much less than assumed here.

the 1930's the figure is 11 per cent and for the second half 14 per cent. It is interesting that an annual rate of imports of £650 million f.o.b., as provided for by the current import restrictions, would again represent, on a c.i.f. basis, about 14 per cent of the 1955/56 gross national product.

While the average import propensity has remained fairly stable, the *export propensity* shows a long run declining trend—21 per cent before the first world war, 16 per cent in the second half of the 1920's, 15 per cent in the second half of the 1930's and 14 per cent in 1955/56. (The high figure of 19 per cent for 1950/51—1954/55 is the result of abnormally high export prices.)

These figures give a rough indication of the tendency towards a discrepancy between import and export propensities. Imports have tended to increase at the same rate as gross national product, while the export relation has tended to fall. The only exception to this was in the 1930's, when there was a clear development towards self-sufficiency. This development seems to have been interrupted after the war.

Comparisons in terms of money values, however, give only limited information about the structural developments, as changing price relations tend to disturb the picture. During the different periods the relation between import and export prices on the one hand and prices of other goods and services on the other seem to have changed substantially. Value figures may then be misleading in interpreting the real importance of imports and exports in relation to total production and consumption of goods and services in Australia. We need to know something about the trends of import and export volume in relation to total activity.

The index numbers in Table VI are intended to give some rough idea of the long run tendencies in the growth of imports, exports and gross national product. It is apparent that the calculations are hazardous, and may be uncertain within wide margins of error. We think, however, that it is better to have these estimates than none.

The volume indexes for imports and exports are based on those published by the Commonwealth Bank and the Bureau of Agricultural Economics respectively, with rough estimates for the earlier years and 1955/56. The export figures should be fairly reliable, because of the small number of major export commodities, their relative homogeneity, and the fact that their relative importance has not changed very significantly. The import figures on the other hand are more uncertain, because of the difficulty of adequately measuring changes in import prices over a longish period, when the composition of imports is constantly changing. However, it is believed that the differences in

the trends of export and import volume are so great that errors of measurement are not likely to distort the picture seriously.

The difficulties of estimating changes in the real gross national product are well known. The method used here was, basically, to deflate farm income by the export price index, dwelling rents by the rent component of the "C" Series index, and the balance of the G.N.P. by a composite index of the "C" Series (excluding rent) and wholesale prices (excluding textiles) weighted 3: 1. This method is, of course, extremely rough, but there is reason to believe that it indicates the order of size of the post-war increase in real G.N.P.

Even when allowance is made for the margins of error in the calculations it is clear that exports have tended to grow at a much slower rate than imports. This is true for the 20 years to 1929 and again since the end of the 1930's. The discrepancy of the trends comes out clearly in the index numbers for the period 1950/51—1954/55, when the volume of imports had risen by 69 per cent and the volume of exports by 13 per cent since the three prewar years, and for the year 1955/56 with the calculated "normal" volume of imports 95 per cent higher than prewar, against a 30 per cent increase in export volume.

The development during the 1930's is in contrast to these trends. From the second half of the 20's to the second half of the 30's the export volume index increased by 28 per cent and the corresponding import index fell by 9 per cent. The increase in export volume was due largely to negative elasticities of supply, as farmers tried to maintain their incomes in the face of falling prices by increasing their output. The fall in import volume was the result of a development towards self sufficiency, which was encouraged by devaluation and the ready availability of factors of production.

The most interesting feature of Table VI is that while exports have grown much more slowly than the real national product since the 1930's, the demand for imports has grown at least as rapidly, and perhaps more rapidly. In the five years to 1954/55 real national product, according to our estimates, averaged about 60 per cent above the prewar levels while real imports were about 70 per cent higher. For the current year real product is estimated at some 85 per cent higher than in the late 30's, while the estimate of normal imports suggests a level 95 per cent higher. The margin of error in the estimates is of course such that no significance should be attached to these differences.

A comparison of Table III and Table VI shows that while real imports and real product have tended to increase at about the same rate since the late 1930's, the proportion of imports to G.N.P. in value terms has increased from 14 per cent to 19 per cent. This, of course, is due to the greater rise in import prices than in domestic prices.

Table II shows that import prices have quadrupled, but over the same period domestic prices have probably not more than trebled.[3]

Table IV classifies imports according to the degree of transformation. Over the whole period 1913-1955 the proportion of producers' materials has remained fairly constant, although within this group there has been a relative decline in elaborately transformed materials and a relative increase in crude materials. Capital equipment has risen from 18 per cent of total imports in 1913 to 28 per cent in recent years. Within this group, imports of both vehicles and producers' equipment have risen strongly.

The proportion of finished consumer goods fell from 28 per cent in 1913 to 24 per cent in 1928/29 and to 19 per cent in the late 1930's. This is some indication of the extent of import replacement. In the last five years the proportion has fallen further to 15 per cent. However, this is probably due largely to import restrictions; it seems likely that if there were no restrictions the proportion of finished consumer goods would be at least as high now as before the war.

Table V gives the main export commodities as a percentage of total exports. This shows that while there have been changes in the relative importance of the different commodities (e.g. wheat and flour exports have declined and wool, sugar and meats have tended to increase somewhat), Australia is still dependent on the proceeds of a very small number of export products.

3. *Interpretation of Long-Term Trends*

The strong long run tendency for imports to rise more or less parallel with national income while exports increase at a significantly slower rate gives the background perspective to the present balance of payments disequilibrium. From this point of view the disequilibrium seems to be fundamental.

The marked differences between the 1930's and the other periods seem to give a good opening for the analysis. When comparing these periods differences in the following four factors are of special significance:

1. Price-cost developments in Australia compared with competing countries.
2. Level of employment.
3. Rate of growth of the economy—with special reference to immigration.

3. This would almost exactly explain the increase in the average import propensity in value terms. If the real increase in imports has been parallel to the increase in national product, and import prices have quadrupled while domestic prices have trebled, the relation would have increased from 14: 100 to 56: 300, i.e. from 14 to 19 per cent.

4. Structural changes within the Australian economy that are partly dependent but to a large extent independent of the other factors.

It is evident that the various factors contained within these four categories are not only very complex but also interrelated in many ways. No econometric or other precision can be given to the relative weight of the various factors. But a comparative study may give some loose assessment of their importance.

Price-Cost Relations and Level of Employment

In comparison with the last few years the general cost conditions for stimulating import replacement were very favourable during the 1930's. At the same time as nominal wages declined by about 20 per cent from 1928/29 to 1932/33—compared with only about 5 per cent in the United Kingdom and Sweden—the devaluation (plus increases in tariffs) implied rather stable or rising prices of imported finished goods. These favourable relations—with only slowly rising wages—were preserved up to 1936/37. In the next two years a 10 per cent rise of wages may have tended to destroy some part of Australia's cost advantage.

The stimulus towards import replacement and export expansion that the price-cost relations implied worked upon an economy with a high degree of unemployment. There was an ample supply of factors of production creating relatively high elasticities of supply and demand. Under these extremely favourable general conditions for a change in the structure of the economy, the shift towards import replacement resulted in a 20 per cent fall in imports relative to G.N.P. (Table III). This means that if these structural changes in production and consumption had not occurred and average import propensities had remained more or less stable, then the total value of imports at the end of the 30's would have been about 25 per cent larger. This downward shift in the demand curve for imports—which did not involve import restrictions—applied particularly to elaborately transformed goods (see Table IV) which fell from 13 per cent of G.N.P. to less than 10 per cent. If average import propensities had not changed, imports of these goods at the end of the 30's would have been one-third larger.

The relative cost conditions of the Australian economy were also favourable during the first years after the war. From the end of the 30's up to 1946/47 wage rates in the United Kingdom had risen by about two-thirds as against one-third in Australia. But full employment, inflationary pressures and backlog import needs apparently prevented these conditions from having any effect. During the subsequent

years the Australian inflation not only eliminated this favourable cost position but reversed it. The Australian wage level in 1954/55 seems to have been about 3½ times the level of 1936/37—1938/39 while the corresponding figure for the United Kingdom was about 2½ times. There are no indications that this unfavourable cost development for Australia is compensated for by other factors such as a more rapid increase in productivity or a lower rise of other costs.

The conclusion that may be drawn from this comparison is that the two main factors which seem to have been responsible for the import replacement development during the 1930's—favourable cost conditions and unemployment—have ceased to operate. It may even be said that prevailing cost relations and full employment conditions in themselves tend to raise the average import propensity above the level of the 1930's, although it is impossible to estimate by how much.

Rate of Growth and Structural Changes

During the 1930's the Australian economy showed signs of serious stagnation with probably no or a very low average rate of growth from the end of the 20's. After the war real gross national product may have expanded by nearly 5 per cent per year. Various rates of expansion of total production and expenditure in real terms—determined by different rates of increase of population and productivity—need not in themselves much influence the propensity to import. But it is likely that with the Australian economy expanding at a rapid rate the average volume of exports in relation to real gross national product will continue to fall. It appears that the increase in the work force (achieved largely by means of a positive immigration policy) that is associated with Australia's rapid economic expansion, will be completely absorbed in secondary and tertiary industries which might even continue to take workers from primary industries.

An important factor influencing import demand seems to be the rise in the ratio of gross investment to gross national product that tends to follow from a higher rate of economic expansion. If—as seems to be the case—the average demand for imports per unit of investment expenditure is higher than the corresponding import propensity for consumption expenditure, then the kind of change in the structure of national expenditure since the 1930's—which has increased the gross investment ratio from 20 to 25 per cent—should be a factor tending to push up the demand curve for imports.

The order of size of this effect cannot be estimated precisely. However the import content of investment expenditure appears to average about 30 per cent, compared with about 15 per cent for consumption expenditure. A rise in the investment ratio from 20 to 25 per cent would therefore lead to an increase of nearly 1 per cent

in the overall import propensity (e.g. from 18 to 19 per cent of G.N.P.).

It should be observed, however, that an analysis in terms of average import propensities for total investment and consumption expenditure is bound to be superficial and does not help much in an understanding of the process of development. Considerable changes in the distribution of expenditure and in the structure of production have occurred within these sectors over the last 15-20 years. Average propensities for large categories must be bad and dangerous tools of analysis when we know that for individual items of expenditure within these categories the import content may vary from 0 (e.g. for services of various kinds) to 100 per cent (for items that are not produced in Australia). It is evident, for instance, that the average import content of investment expenditure on new machines is much higher than for expenditure on new building. In each case account must be taken both of direct purchases of imported goods and of indirect needs of imported raw materials, half finished goods and so on in the various stages of production. Ultimately the investigation must be carried out in terms of an input-output analysis.

With existing statistical material little can therefore be said about the problem of how changes in the structure of the Australian economy have affected import demand. A considerable import replacement effect can be observed as a result of structural changes during the 1930's. It is possible that the same tendencies have continued during the post-war period, although the effects have been concealed by the other factors discussed above. The doubling or more of manufacturing capacity since the end of the 1930's has certainly implied, to a large extent, a substitution of home production for imported finished goods and has resulted in a net saving of foreign exchange in spite of increased requirements of imported raw materials.

A list of new industrial projects of the import-replacing type can easily be made impressive—as is often done. Less impressive in individual cases but apparently in sum quite important is the simultaneous expansion of old and new requirements of foreign goods that will accompany expansion and not least the need for new machinery that the new or increased capacity of import replacing industries brings with it. The net effect of this process will—as demonstrated in the 1930's—depend largely on the price relationships within the economy.

The result of the above discussion might be put briefly as follows: The continuing high investment, especially in secondary industries, during the post-war years has without doubt resulted in considerable import replacement, and this has been strongly encouraged by import restrictions. This development has so far not resulted in an actual

decline of import demand (potential imports) along the lines of the import replacement trends during the 1930's because of other counterbalancing factors (full employment, a high investment ratio and a rapid expansion of demand). The effects on actual imports would probably appear if (and when) the continuing investment in new import replacing projects stopped and the gross investment ratio fell back to the level of the 1930's, and unemployment returned to the same degree. This conclusion cannot be given any quantitative precision and certainly does not suggest any policy recommendations.

4. *Some Current Issues*

Our analysis might be of some help, however, in discussing certain current issues bearing on the balance of payments problem.

Immigration

It is often said that the high rate of immigration is an important cause of the large investment needs of Australia and therefore indirectly of the high import demand, especially for capital goods. A cut in immigration would therefore help to solve the balance of payments problem.[4] This is—as far as we can see—a dubious recommendation. There are no simple mechanical relations between immigration, the need for new capital in the form of houses, stocks, machines and so on, and imports.

It is not certain that a lower rate of increase in population would be followed by a fall in the investment ratio. In spite of the fact that its population is growing very slowly, Sweden seems to have had a higher gross investment ratio during the post-war years than Australia. Instead of the needs of a growing population there are the growing needs of a more or less stationary population with expanding income and expenditure as determined by the current rise in productivity. As investment activity for productivity purposes, which implies more capital per worker, tends to contain relatively more machinery and similar items than the investment in public works, public utilities and houses for a growing population, a restrictive immigration policy might well lead to a rise in the average import propensity.

However, the rate of development of the economy is determined largely by the level of exports, which have tended to decline relatively

4. This view was expressed forcibly by the Institute of Public Affairs, Victoria, in its *Review* for October-December 1955. It said: "The migrant sets up immediately a demand for capital which has been variously estimated at from £2,000 to £3,000 per head. Taking the lower figure it can be shown that the additional imports—that is over and above what they would otherwise be—necessitated by the present migrant intake of 100,000 a year would average out over a ten year period at something like £87 million a year. . . . If population increase continues at a rate approaching a quarter of a million people a year, and an investment programme on the scale needed to absorb such an increase is maintained, the balance of payments problem must become progressively more acute".

to national income. This decline tends to become more rapid when the rate of growth of the economy is accelerated by a rapidly rising population. The fundamental question is whether such a tendency is a necessary consequence of immigration. If a sufficiently large proportion of the additional supply of labour and capital (from new savings) went to export production—primary or secondary—then there should not be the kind of discrepancy between the trend of exports and imports observed above. This whole problem of the structure of the Australian economy and the allocation of factors of production is of course a vital issue of economic policy.

Savings and Capital Imports

The other strategic supply factor determining the development of the Australian economy is the level of savings. There are reasons for regarding the supply of savings as especially scarce in Australia because of the high investment demand for public utilities and housing that arises from the population growth.

This raises the question of the possibilities of supplementing the supply of savings by more capital imports. Capital inflow was relatively much more important during the 1920's—when it amounted to about one-third of the f.o.b. value of imports—than during the last 5-year period, when it covered less than 10 per cent of imports. The issue of capital imports is, however, a complex one. In the 1920's the net capital inflow probably did not do more than cover interest and dividend payments on the existing foreign indebtedness, which was mainly of a fixed interest nature. The country was thrown into great financial difficulties when new borrowing became impossible at the end of the 1920's and the service of the debt became an almost intolerable burden. Against the background of the dangers with fixed indebtedness, the direct investment and equity borrowing that has been predominant during the post-war period seemed to be a more rational method of getting capital from abroad. However, under the conditions of full employment and inflation during the post-war period new problems have appeared.

An indication of the extent to which equity borrowing has replaced fixed interest borrowing is given by the decline in interest payments and the sharp increase in profits paid or accruing to foreigners. Net interest paid overseas fell from £27 million in 1938/39 to £17 million in 1954/55, while net remittances of dividends and profits increased from £9 million to £32 million and net undistributed profits accruing to foreigners increased from £4 million to £27 million.

The high profits in a full employment economy with some inflation and markets sheltered from foreign competition make foreign equity capital relatively costly. So long as the profits remain undistributed

and are re-invested in Australian industry the claims will only be potential. But they tend to grow rapidly[5] and may have a disturbing effect in the long run on the foreign exchange position. This form of capital imports might therefore prove an expensive and risky way of trying to meet the balance of payments problem.

Import Regulations

Import regulations are a necessary method of meeting heavy short-term disturbances in the Australian balance of payments when exchange reserves are inadequate. However, the present discrepancy between export income and potential import demand seems to be relatively large, and appears to be the result of a fundamental disequilibrium between the long run trends of exports and imports. If this is so, the use of import regulations will not help to remove the disequilibrium, as they will not affect the causes of the excess of imports or the deficiency of exports. There is therefore a great danger that Australia will have to resort to import regulations of a long-term nature and only accidental wool booms will make the lifting or extensive easing of the controls possible. Moreover, there is a risk that any relaxation of import controls will tend to be very short-lived as there will be an immediate clamour to import as much as possible before controls are again tightened.

There are without doubt great disadvantages in having very restrictive import regulations over long periods. An adequate discussion of these disadvantages is not possible here, but the following points might be mentioned:

(1) When stocks of imported materials have been worked down to low levels, bottle-neck situations will tend to develop at

5. This may be illustrated by an arithmetical example:

Suppose that foreigners are earning a 10 per cent average yield (after tax) on their investments in Australia. Then their profits of £59 million in 1954/55 would represent an investment of about £600 million. If we assume that there is no more direct foreign investment in Australia, but foreigners continue to earn 10 per cent on their existing investment, and go on re-investing half of their profits, then in 10 years' time their investment would have grown to £1000 million and their annual net profits to £100 million, of which £50 million would be remitted overseas and £50 million re-invested.

However, it seems more reasonable to assume that direct foreign investment in Australia will continue. If it remains at about £30 million a year (which many would consider a rather modest level) then on the above assumptions concerning profits, the total foreign investment in Australia would grow in the next decade from £600 million to £1400 million, annual profits from £60 million to £140 million and both remittances and undistributed profits from £30 million to £70 million. If exports rose over this period by 2 per cent a year, profits accruing to foreigners would increase from under 8 per cent of export income in 1954/55 to 16 per cent in 1964/65.

If we assumed a higher rate of direct foreign investment, or a higher rate of profit, or a higher proportion of re-invested earnings, then the rate of growth of both the foreign equity investment and the annual commitments would be correspondingly higher.

different points with increasing frequency, involving risks of spotty unemployment. These problems have to be solved *ad hoc*, with the risk of an increasingly chaotic pattern of import controls.

(2) Import restrictions provide opportunities for private profiteering and a strengthening of the already strong monopoly elements within the Australian economy. The pattern of quotas cannot be made flexible enough. Entrepreneurs and workers tend to have a common short-term interest in the protection which import quotas give to their respective firm or branch of activity. The pressure-group character of the Australian economic-political structure will be strengthened still more.

(3) The effective protection that import control gives will tend to increase costs and lower the competitive position of the export industries. At the same time import controls need not reduce potential import demand as investment expenditure will be stimulated, resulting in increased imports of machinery, and at the same time the relatively high costs of protected home industries—at given levels of tariff protection and exchange rates—will not eliminate potential foreign competition.

(4) A full employment economy with long-term import controls will try to do too many things, with the result that productivity will be low. Under the 100 per cent protection of import quotas every new project seems to be or can be made profitable, as prices can be charged according to internal costs with no or very little attention paid to potential competition from outside. Relatively small markets, short runs of production and inelastic and expanding demand will under such conditions create a cumulative process of industrial growth, that would imply relatively little room for the opportunities of increasing general productivity along the lines of the comparative costs and advantages of the Australian economy in the international division of labour. This means that the rise of real national income will be significantly lower than would otherwise be possible. Since before the first world war the relation of import value to gross national product has varied around 20 per cent; this is a measure of the "natural" import needs of a relatively small economy with a relatively free division of labour with the rest of the world (although with high tariff protection) and is more or less in line with the experiences of other countries

of the same relative size. The target for current import restrictions (£650 million f.o.b.) would imply an import-G.N.P. ratio of about 13 per cent in 1956/57—and the process outlined above will mean a continuation of this tendency towards unproductive self-sufficiency.

5. *Conclusions*

There seem to be two main alternative roads out of the dilemma that the current balance of payments situation presents to Australia. They are not strictly alternatives—various combinations of them are without doubt possible.

One alternative involves more central planning and economic policy co-ordination by the Federal Government. In order to make import controls function over a long period and reduce the risks mentioned above, various forms of investment controls schould be co-ordinated with the import regulations. One and five-year plans of economic development for the Australian economy should be drawn up as a basis for the detailed regulation of imports and investment as well as for the planning of monetary and fiscal policy. Good arguments could also be produced for price and monopoly controls. However, constitutional and political difficulties would make any suggestion that we should take this road of direct controls look rather naive.

The other alternative is to work through the decentralized, so-called "automatic" forces within the market economy. Under existing conditions of over-full employment nearly everything is profitable. The system of price relationships should instead function in such a way as to restrain as well as to stimulate the various types of economic activity according to the potentialities of the Australian economy. General propositions of this kind are of course easy to formulate and even to agree upon, but more specific conclusions do not flow as easily.

Clearly, the first step is to eliminate the inflationary gap and over-full employment. Only when this has been done will it be possible to judge to what extent the current balance of payments deficit is due to inflation, and to what extent—if at all—it reveals a fundamental disequilibrium.

If the removal of excess demand shows that there is in fact a long-term disequilibrium in the balance of payments—and our analysis seems to suggest it highly probable—further action will be necessary. As concluding remarks we shall try to use the results of our analysis to suggest the sort of measures which might be taken, along the lines of the second alternative discussed above. It must be emphasised, however, that measures of this type would not provide a quick solution to Australia's balance of payments problems. The main aim would be to influence economic development in a way which would set the

economy on the road towards external equilibrium. Unless such measures are taken, the continued reliance on import restrictions to protect international reserves will lead it further in the opposite direction.

Any attempt to work through the price system must pay regard to the two fundamental scarcities of the Australian economy—of savings and of foreign exchange. Relative prices should give full expression to these scarcities in order to lead production and demand into the right channels. A more flexible price system is, in other words, an important condition for approaching equilibrium.

When the potential deficiency of savings gives rise to excess demand for goods and services, the marginal propensity to import becomes high. Although we have suggested that a reduction in migration might not have any substantial effect in reducing import demands, there is no doubt that it would reduce the pressure from urgent investment needs, and so make it easier to carry out an anti-inflationary policy.

An effective anti-inflationary policy should mean a reduced demand for imports—both because of the elimination of excess demand and because less credit would be available for the financing of imports (especially for inventories). At the same time ample credit should be made available for export production. A higher level of interest rates would support this policy of re-allocating the supply of savings.

The potential scarcity of foreign exchange implies that actual import prices in Australian pounds are too low. A correction of these price relationships could be made by raising tariffs or by increasing indirect taxes on goods with a high import content. Such a policy would make possible higher government savings and would, to this extent, support the general anti-inflationary policy.

An alternative way of raising import prices would be by devaluing the Australian pound—the large potential deficit in the current balance of payments can be interpreted as an over-valuation of the £A. In combination with a re-allocation of savings by way of credit policy, this would also support the expansion of export industries. This should not, of course, be taken as a recommendation for economic policy, but rather as one possible way of correcting price relationships, if there is still a large balance of payments deficit after excess demand has been eliminated.

It was shown above that changed price relations would affect the direction of development only if the elasticities of demand and supply were high enough, as was apparently the case during the 1930's. This was in most respects a sad decade, especially for Australia, and should certainly not be taken as a model for economic policy. This general view should not prevent us, however, from learning some lessons from

the experiences of that time. The changed price relations between foreign and home goods after 1931 had useful effects under the conditions existing then. These conditions cannot be reproduced of course —nobody wishes that—but a lower degree of full employment—say 98 per cent instead of 102 per cent—would make the price system work more efficiently, create more competition and reduce the likelihood of a new wage-price spiral which under present conditions would tend to follow any rise in import prices.

If there is in fact a substantial long-term disequilibrium in the Australian balance of payments, it is clear that measures of the type suggested here would not do away quickly with the need for import controls. But the pressure on the restrictions would be reduced and a progressive approach towards equilibrium would permit successive relaxations which would create confidence.

This might be thought a rather modest result for a positive policy aimed at removing the need for protective import restrictions. However, it is doubtful whether there is any easier or quicker way of achieving this objective. And if some of our proposals are found unattractive in themselves, they should be considered as part of a practical alternative to more or less permanent import controls, with all their disadvantages and dangers.

ERIK LUNDBERG
MALCOLM HILL

Sydney.

APPENDIX

TABLE I

Balance of Payments

£A million

Annual Average	Exports f.o.b. and Gold Production	Imports f.o.b.	Net Invisibles	Balance on Current Account	Net Capital Inflow	Increase in Reserves	Reserves at end of Period
1928/29–29/30 ..	118	129	— 51	— 62	*	*	*
1930/31–34/35 ..	106	65	— 45	— 4	*	*	62
1935/36–39/40 ..	151	112	— 50	— 11	13	2	74
1940/41–44/45 ..	144	86	— 36	22	6	28	212
1945/46–49/50 ..	394	322	— 73	— 1	81	80†	630
1950/51–54/55 ..	827	767	—172	—112	72	— 40	428
1950/51	988	742	—142	104	70	174	804
1951/52	678	1052	—209	—583	152	—431	373
1952/53	863	511	—161	191	— 2	189	561
1953/54	828	683	—163	— 18	28	10	571
1954/55	780	846	—190	—256	114	—142	428
1955/56 (est.) ..	775	800	—200	—225			
1955/56 "Normal"	775	895	—210	—330	80	—250	

* Figures comparable with those for later years are not available.
† Excluding increase due to revaluation.

TABLE II

Terms of Trade

1936/37-38/39 = 100

Annual Average	Export Price Index (excluding Gold) (Commonwealth Stat.)	Import Price Index (Commonwealth Bank)	Terms of Trade
1925/26–29/30 ..	119	106*	112
1930/31–34/35 ..	76	97	79
1935/36–39/40 ..	98	102	97
1940/41–44/45 ..	114	174	66
1945/46–49/50 ..	280	261	104
1950/51–54/55 ..	527	396	134
1950/51	690	374	184
1951/52	495	421	118
1952/53	505	398	127
1953/54	496	390	127
1954/55	450	396†	114
1955 (Dec. Qtr.)	409†	406†	101

* Partly estimated.
† Subject to revision.

TABLE III

Imports and Exports as Percentage of G.N.P.

Annual Average	Imports c.i.f.	Exports f.o.b.
	%	%
1910/11–1914/15*	20·0	21·0
1915/16–1919/20*	19·0	22·0
1920/21–1924/25*	20·0	19·0
1925/26–1929/30*	18·0	16·0
1930/31–1934/35	11·1	14·7
1935/36–1939/40	14·4	14·8
1940/41–1944/45	19·4	9·9
1945/46–1949/50	18·8	19·1
1950/51–1954/55	20·5	19·3
1950/51	23·2	27·0
1951/52	31·3	17·3
1952/53	14·0	20·1
1953/54	16·5	17·8
1954/55	19·4	15·8
1955/56 (est.)	17·2	14·4
1955/56 ("Normal") ..	19·3	14·4

* Rough estimates.

TABLE IV

Imports According to Degree of Transformation as Percentage of Total

	1913	1928/29	1932/33	1936/37 to 1938/39	1945/46 to 1949/50	1950/51 to 1954/55	1954/55
	%	%	%	%	%	%	%
Producers' Materials							
Crude	7·2	10·6	10·8	11·7	10·3	10·9	12·6
Simply Transformed ..	7·1	3·7	5·1	4·1	5·1	5·8	7·1
Elaborately Transformed ..	31·2	31·3	37·0	29·5	27·5	26·5	23·9
Total	45·5	45·5	52·9	45·3	42·9	43·2	43·6
Capital Equipment							
Producers' Equipment ..	10·5	8·4	5·5	11·0	9·8	14·1	14·8
Transport Equipment ..	7·0	11·5	4·8	11·9	13·8	14·1	13·1
Total	17·5	19·9	10·3	22·9	23·6	28·2	27·9
Finished Consumer Goods							
Crude	1·0	·6	·6	·5	·4	·5	·6
Simply Transformed ..	3·0	3·6	3·2	3·2	3·2	2·4	3·0
Elaborately Transformed ..	24·2	19·8	16·1	15·4	12·6	11·9	13·6
Total	28·2	24·1	19·9	19·1	16·2	14·8	17·1
Fuels and Lubricants	1·9	6·7	8·9	7·5	8·9	8·4	6·8
Auxiliary Aids to Production ..	2·7	3·5	7·8	4·7	6·0	4·4	3·4
Munitions	4·2	·3	·2	·6	2·5	1·0	1·0
Totals							
Crude	8·2	11·2	11·4	12·3	10·7	11·4	13·2
Simply Transformed ..	12·0	14·1	20·0	17·2	19·2	18·5	18·8
Elaborately Transformed ..	79·8	74·6	68·6	70·5	70·1	70·1	68·0

TABLE V

Exports: Principal Commodities as Percentage of Total

	1928/29	1932/33	1936/37 to 1938/39	1945/46 to 1949/50	1950/51 to 1954/55	1954/55
	%	%	%	%	%	%
Wool	44·4	37·0	37·1	43·0	52·2	46·6
Wheat and Flour ..	19·0	22·3	15·7	15·4	10·1	8·7
Butter	5·2	9·1	7·9	4·5	2·1	3·2
Sugar	1·7	1·5	2·9	2·4	2·6	4·1
Meats	4·6	6·1	8·4	5·8	6·2	8·4
Hides and Skins ..	6·7	2·4	4·3	3·2	2·6	2·6
Lead	2·3	2·4	3·4	3·3	3·0	3·3
Dried Fruits	1·7	2·3	1·9	·7	·8	1·1
Fresh Fruits	·7	2·5	1·5	·7	1·0	1·2
Total of Foregoing ..	86·3	85·6	83·1	79·0	80·6	79·2

TABLE VI

Volume Indexes of Gross National Product, Imports and Exports

1936/37-38/39 = 100

Annual Averages	G.N.P.*	Imports	Exports
1925/26–29/30 ..		109	79
1930/31–34/35 ..		59	97
1935/36–39/40 ..	100	99	101
1940/41–44/45 ..		100	68
1945/46–49/50 ..	130	110	106
1950/51–54/55 ..	159	169	113
1950/51	150	182	112
1951/52	150	217	92
1952/53	155	110	122
1953/54	165	151	118
1954/55	173	185	122
1955/56 (est.) ..	180	172	130
1955/56 "Normal"	180	195	130

* Rough estimates.

UNIFORM TAXATION WITH STATES TAXING INCOMES

1. *Introduction*

Up till 30th June, 1942, each State and the Commonwealth imposed separate rates of income tax in accordance with its own different Income Tax assessment act. Various attempts had been made to achieve some degree of uniformity in State assessment acts, but with limited success.[1] It was first suggested in 1940 that the States as a war emergency measure should vacate the income tax field in favour of the Commonwealth. Owing to differences in the relative severity of State taxation and the constitutional limitation that it shall not "discriminate between States" in taxation, the Commonwealth was unable to use its income tax power to the full extent desired. In 1942, following an expert investigation,[2] the Commonwealth offered to make the States annual tax reimbursement payments equal to their average income tax collections during 1939/40 and 1940/41 if they would cease to levy their own income taxation for the duration of the war. The proposal was rejected, but the Commonwealth nevertheless enacted the necessary legislation.[3] Four States thereupon challenged the constitutional validity of the legislation, but the High Court of Australia upheld it.[4]

The judgment had far-reaching constitutional implications because the Court ruled that the Commonwealth had priority in taxation. This was the beginning of what is known in Australia to-day as uniform taxation, under which the Commonwealth is the sole income taxing authority.

The Commonwealth now enjoys a monopoly of income taxation by reason of its priority in taxing. No State is precluded from imposing its own income tax. However, if it does so, it automatically ceases to be entitled to a tax reimbursement payment.[5] Furthermore, such taxation would be super-imposed on the existing Commonwealth income tax. In present circumstances, no State could hope to raise an amount equal to its reimbursement payment from its own income tax. Thus

1. Royal Commissions on Taxation in 1921 and 1932/34 dealt with lack of uniformity between the assessment acts of the Commonwealth and States.
2. See *Report of the Committee on Uniform Taxation,* March 1942.
3. The Commonwealth passed four Acts, viz:
   (a) *The Income Tax Act,* imposing rates of tax for the year;
   (b) *The Income Tax Assessment Act,* which, inter alia, gave payment of the Commonwealth Income Tax priority over all other taxes;
   (c) *The Income Tax (War Arrangements) Act,* which provided for the transfer of State officers to the Commonwealth; and
   (d) *The States Grants (Income Tax Reimbursement) Act,* which provided for payments to the States.
4. South Australia v. The Commonwealth, 65 *C.L.R.* 373. The other States involved in the appeal were Queensland, Victoria and Western Australia.
5. *States Grants (Income Tax Reimbursement) Act,* 1942, S.4.

the States are dependent on the Commonwealth for a major portion of their revenue. Furthermore, they have lost what was their only flexible source of revenue.

The original uniform taxation legislation was due to expire on 30th June, 1946. In 1945, the Commonwealth Government informed the State Governments of its intention to continue the system, but subject to a new scheme of reimbursement payment to the States. Following meetings of Commonwealth and State representatives, a formula was devised and incorporated in the legislation to determine the total reimbursement to the States each year and its distribution between the States.[6]

Since the introduction of the formula in 1946, there have been two important developments. First, each year since 1949/50 Special Financial Assistance Grants have been made by the Commonwealth to supplement the reimbursements determined in accordance with the formula. These supplementary grants are made entirely at the discretion of the Commonwealth Government. Secondly, in 1952 the Commonwealth Government indicated that it favoured the restoration of income taxing powers to the States. A Committee of Commonwealth and State Treasury officers was instructed to prepare a report[7] on the technical difficulties associated with such a move.

Following completion of this report, a Premiers' Conference was convened to consider the restoration of taxing powers to the States. However, the conference reached a deadlock. Two States, Western Australia and Tasmania, declared opposition to the abolition of uniform taxation. Queensland was prepared to resume income taxing responsibility if adequate provision were made to offset its relatively low taxable capacity.[8] The remaining three States indicated willingness to impose their own income tax provided they were satisfied with the extent of Commonwealth retirement from the field.

2. *Advantages of Uniform Taxation*

There is no doubt that the present system of uniform taxation has considerable practical advantages over the former system under which the Commonwealth and each State Government independently imposed its own income taxation. There are advantages both to taxpayers and Governments.

So far as the taxpayer is concerned, he is faced with only one set of taxation laws, with one return to complete and one tax demand

6. *States Grants (Tax Reimbursement) Act,* 1946. Details of the formulae are contained in Section 6 and the Schedules to the Act.

7. Report by Commonwealth and State Treasury Officers; *Resumption of Income Tax by the States,* Canberra, 19th January, 1953.

8. The term relative taxable capacity is used to denote income taxation yield per head in each State expressed as a percentage of income taxation yield per head in all States.

to pay. Prior to 1942, all individual taxpayers deriving income from more than one State had to submit separate State taxation returns as well as a Federal return. The six States between them imposed twenty-two separate taxes on incomes. The greatest complexity existed in the taxation of companies which had their head office in one State and branches in other States. The States had been unable to agree on a common basis for taxing such companies, although there was reciprocity between certain States. In such circumstances, there was considerable uncertainty concerning liability to taxation, and some double taxation was inevitable.

Under uniform taxation, State Governments largely escape the political unpopularity attached to taxing incomes directly. From a fiscal viewpoint, the system operates to the advantage of the poorer States to the extent to which the revenue from which reimbursements are paid is raised in accordance with relative taxable capacity, whilst the grants are distributed in accordance with the formula which has some regard to relative financial need. The 1953 Report of the Treasury Officers[9] showed that relative taxable capacity of the Australian States ranged from 73 per cent of the Australian average in Tasmania to 113 per cent in Victoria. Differences in the relative severity of State income taxes pre-war were in part due to differences in relative taxable capacity. The States with relatively low taxable capacity now receive revenue comparable with States of high taxable capacity without being obliged to impose higher rates of taxation.

The Commonwealth as the government primarily responsible for determining economic policy is now in a stronger position to implement its fiscal policy. For instance, it can give greater effect to anti-cyclical measures through its dominant control over private consumption and public expenditure. Again the Commonwealth's strong revenue position has enabled it in recent years to dominate the proceedings of the Australian Loan Council through its support of borrowing programmes.

3. *Disadvantages of Uniform Taxation*

The major disadvantage of the present system of uniform taxation in Australia is that it has reduced all States to a condition of financial dependence on the Commonwealth. The ability of State Governments to improve existing services or to provide new services for which they are constitutionally responsible depends on the amount of the supplementary grant decided upon each year by the Commonwealth Government. The State Governments have recently been placed in a difficult financial position owing to continually rising prices and costs. They

9. *Op. cit.* p. 32. The figures quoted are from an index of taxable capacity relating to individuals and companies when taxed on an origin of income basis.

claim that they have been obliged to incur additional outlay on education and health services without having access to any sufficiently flexible source of revenue from which to finance such expenditure. If financial responsibility is defined to exist when any real increase in expenditure by a State must be met entirely by an increase in taxes levied by that State,[10] the States have only limited responsibility at the present time. One measure of financial responsibility in this sense is the relationship between State taxation collections and Commonwealth grants to the States. The comparative position in 1939/40 and 1953/54 is shown in Table I.

TABLE I

Relative Importance of State Taxation and Commonwealth Grants to States

1939/40:	State Taxation	£54,387,000	77·58%
	Commonwealth Grants	15,717,000	22·42%
	Total	£70,104,000	100·00%
1953/54:	State Taxation	£80,217,000	27·89%
	Commonwealth Grants	207,360,000	72·11%
	Total	£287,577,000	100·00%

However, the absence of financial responsibility in this sense must not be identified with financial irresponsibility connoting waste and extravagance. It has not been seriously suggested that Australian State Governments have been increasingly wasteful in their expenditure as their dependence on Commonwealth grants has increased.[11]

From the Commonwealth's viewpoint the major disadvantages of uniform taxation is the unreasonable demands that the States are tempted to make for supplementary grants. When all that they demand is not forthcoming, the Commonwealth is sometimes accused of infringing the spirit of federalism and is blamed for the inability of the States to expand services.

4. *Requirements of an Alternative Scheme*

Our purpose is to propose a scheme of Commonwealth-State income taxation which largely retains the major advantages of the existing uniform taxation system mentioned in Section 2 above and, at the same time, goes some way towards overcoming the disadvantages

10. R. Dehem and J. N. Wolfe: "The Principles of Federal Finance and the Canadian Case", *Canadian Journal of Economics and Political Science*, Vol. 21, No. 1, February 1955, for definitions distinguishing between financial independence, responsibility and autonomy.

11. We certainly do not agree that unconditional grants infringe any principle of financial responsibility. Contrast our attitude with that of J. A. Maxwell, in *Federal Subsidies to the Provincial Governments in Canada*, and B. P. Adarkar in *The Principles and Problems of Federal Finance.*

mentioned in Section 3. If such a scheme is to have any worth, it should be straightforward and capable of being adopted in the existing political and financial circumstances. The major objectives of such a scheme are:

(i) The simplicity achieved by the system of uniform taxation should be retained in the interests of the taxpayer.

(ii) The States if they so desire should be free to raise additional revenue by increasing rates of taxation to provide additional services.

(iii) There should be no large overall differences between States in the severity of Commonwealth plus State taxation arising solely from the need of any State Governments to maintain the revenue they previously received by way of tax reimbursement and supplementary grants.

5. *A Scheme Envisaged*

Previous discussions of the problems associated with the resumption of income taxing powers by the States have generally centred round the assumption that the Commonwealth will vacate the field to the extent of the present tax reimbursement and supplementary grants, and the States will enter the field to collect approximately the same amount through the exercise of their own taxing powers.[12] On such a premise, the need for reimbursement grants as such would disappear.

There is a major difficulty associated with this approach. Because of their relatively low taxable capacity, some States would have to impose substantially heavier rates of State income tax than other States in order to raise the same amount of revenue as they now receive by way of grants.[13] There would be substantial differences between States in combined Commonwealth-State taxation such as existed pre-war, thus infringing the third requirement mentioned above. A further shortcoming of this approach is that the adoption of uniform assessment laws would be purely voluntary on the part of the States. It is probable that, after a few years, some differences would be introduced and uniformity and simplicity would be lost.

It would seem that it is impossible to overcome difficulties such as these under any scheme in which reimbursement grants are dispensed with entirely. Reimbursement grants provide the means whereby interstate differences in relative taxable capacity can be smoothed out.

12. See, for example, the Report of the Treasury Officers, *op. cit.* p. 5. This was the basis of the discussion at the Premiers' Conference in February 1953, which met to consider the restoration of taxing powers to the States.

13. See Report by Treasury Officers, *op. cit.* pp. 32-33.

Furthermore, they can be made conditional upon the maintenance of uniformity in assessment laws.

It is possible to envisage a situation in which the States are obliged to impose State income taxes to maintain their existing revenue. If the Commonwealth retired from the income tax field to a limited extent, and reduced reimbursement payments/supplementary grants by the same amount, the States might find it necessary to enter the income tax field to recover the revenue lost. The Commonwealth could reduce the aggregate sum it would otherwise pay to the States by the amount of its retirement from the income tax field.[14] The distribution of the reduced sum available to the State could be in such proportion that each State, if it imposed the same (uniform) rates of State income tax, would derive the same revenue from both sources, namely, a reduced reimbursement payment plus State tax, as it formerly received by way of reimbursement payment plus supplementary grant.

Under such a scheme of sharing the income tax field between the Commonwealth and States, there would, as with any scheme where the States independently impose income taxes, be no guaranteed uniformity of taxation rates throughout Australia. A State would be free to impose rates which, when taken in conjunction with Commonwealth rates, could be greater or less than previous Commonwealth rates. However, any variation between States would result from decisions affecting the levels of State services. Thus, if one State had higher rates of income tax than others, then, *ceteris paribus*, it would follow that standards of services in that State would be above those in other States.

6. *A Suggested Scheme*

By way of illustrating the situation envisaged above, we have worked out a scheme on the basis that the Commonwealth vacates the income tax field to a limited extent, namely, to the extent of recent supplementary grants, but continues to make the reimbursement payments in accordance with the *States Grants (Tax Reimbursement) Act* 1946. The scheme will differ slightly from that envisaged in Section 5 in so far as it permits small differences in the relative severity of State income tax because of differences between States in relative taxable capacity that are not offset by an appropriate adjustment to reimbursement payments. In any event, it will later be shown that such differences in the relative severity of State income tax can be

14. So far as we are aware, the only occasion on which such an approach has been suggested was by Professor W. Prest, in the Joseph Fisher Lecture in Commerce at Adelaide, in September 1954 (p. 28). He suggested that the States might obtain sufficient freedom of action if they were given power to raise something less than current reimbursement payments through State income tax. Presumably Professor Prest envisaged a continuation of reimbursement grants in a modified form.

offset by other means. The reason for allowing this variation is to limit the need for substantial variation to the existing legislation governing tax reimbursement payments.

This hypothetical scheme has been designed to commence from 1st July, 1957. In 1957/58, the distribution of the present reimbursement payments to the States will be entirely on an "adjusted population" basis.[15] For the purpose of exposition, it will be assumed in this hypothetical example that by 1957/58, the aggregate reimbursement payment calculated in accordance with Section 6 of the States Grants (Tax Reimbursement) Act, 1946, has increased to £160 m.,[16] and that, but for the decision of the Commonwealth to permit the States to re-enter the income tax field, it would have decided to pay a supplementary grant of £20 m., this being a reasonable assessment of the States' financial needs in excess of the reimbursement payment.[17] In other words, we are merely assuming the amount of the supplementary grant in 1957/58, which must in any event be decided early in 1957/58. It is proposed that the Commonwealth should retire from the field of income tax to the extent of the supplementary grant that would otherwise have been paid. As will be seen later, it would make the suggested scheme much simpler if the Commonwealth retires from the income tax field to the required amount by reducing the tax payable in all ranges of income by a fixed percentage.[18] It is further assumed that each State will decide to raise the same amount of revenue from State income tax as it would have received by way of supplementary grant.

It is proposed, for reasons that will be given later, that the States re-enter the field of individual income tax only, and further, that they tax individuals on a residence basis.[19] Finally, the assumption will be made for the purpose of illustration that the relative taxable capacity of the six States in the field of personal incomes when taxing on a residence basis will be the same in 1957/58 as it was calculated by the Treasury Officers to be in 1951/52.[20]

On the basis of these assumptions, it is possible to show the impact on State finances in the first year of its operation, 1957/58, of the adoption of the scheme outlined. Table II shows the tax reimbursement payment and supplementary grant which each State would receive in

15. Distribution on a population basis adjusted for differences in numbers aged 5 to 15, and density of population. See Second Schedule to *States Grants (Tax Reimbursement) Act*, 1946.

16. Compared with £140·8 m. for 1955/56.

17. Compared with £14·2 m. for 1955/56, and an average of £23·3 m. per annum over the past five years.

18. See note (25) below.

19. It may be noted that the position would then be the reverse of that which existed in Canada when the Provinces of Ontario and Quebec re-entered the field of Corporation tax in 1947.

20. See Report by Treasury Officers, 1953, *op. cit.* p. 32.

that year if the existing scheme of uniform taxation were continued, and the total amounts available for distribution were £160 m. and £20 m. respectively:

TABLE II

Assumed Distribution of Reimbursement Payments and Supplementary Grants, 1957/58

	Reimbursement Payment £'000	*Supplementary Grant* £'000	*Total Grant* £'000
New South Wales	60,266	7,533	67,799
Victoria	41,883	5,235	47,118
Queensland	25,314	3,164	28,478
South Australia	14,307	1,789	16,096
Western Australia	12,533	1,567	14,100
Tasmania	5,697	712	6,409
Total	160,000	20,000	180,000

Under the scheme of State income tax which we suggest and have outlined above, the position in 1957/58 would be as shown in Table III.

TABLE III

Assumed State Revenue and Relative Severity of State Income Tax, 1957/58

	Reimbursement Payment £'000	*Revenue to be Raised by State* £'000	*Index of Relative Taxable Capacity*	*Relative Severity of State Income Tax*
New South Wales	60,266	7,533	96·0	90·9
Victoria	41,883	5,235	113·5	74·3
Queensland	25,314	3,164	74·1	129·1
South Australia	14,307	1,789	113·3	78·4
Western Australia	12,533	1,567	127·3	76·1
Tasmania	5,697	712	60·3	151·2
	160,000	20,000	100·0	100·0

In 1955/56, the Commonwealth expects to collect £577 m. in income tax of which it is estimated that £390 m. will be paid by individuals and £187 m. by companies. Of these collections it will pay to the States a total of £155 m., of which it is estimated that £140·8 m. will be by way of reimbursement in accordance with the formula, and the remaining £14·2 m. will be a supplementary grant.[21] If it is assumed that the same relationship exists between Commonwealth collections of individuals and company taxes, and between tax collections and

21. In fact, the Commonwealth will pay £16·2 m. in supplementary grants, but this will include a special non-recurring payment of £2 m. to New South Wales for flood relief.

reimbursement grants in 1957/58 as in 1955/56, then the relative severity of combined Commonwealth and State rates of individual income tax in each State will be as shown in Table IV, compared with 100 in each State under uniform taxation.

TABLE IV

Index of Relative Severity of Commonwealth and State Income Tax, 1957/58

New South Wales	99·51
Victoria	98·69
Queensland	101·37
South Australia	98·87
Western Australia	98·77
Tasmania	102·79
	100·00

Queensland and Tasmania, because of their relatively low taxable capacity, would both require to impose rates of State taxation substantially higher than in other States to raise revenue equal to that formerly received by way of supplementary grant (see Table III). It will be explained later that, so far as Tasmania is concerned, the necessity to impose higher taxation is avoided because of the Special Grant it receives annually from the Commonwealth under Section 96 of the Constitution. However, Queensland does not receive special grants, and there are several reasons why it is not generally desired it should become a claimant State. The alternative is the payment of a fixed grant to Queensland to compensate for its reduction in revenue.

At the Premiers' Conference in February, 1953, which considered proposals for the return of taxing powers to the States, the position of Queensland was referred to by the Prime Minister (Rt. Hon. R. G. Menzies). He said that the Commonwealth was prepared to make a special fixed annual grant to Queensland to offset this difference in relative taxable capacity.[22] He affirmed that it would be most undesirable if rates of taxation in Queensland needed to be so much higher than in New South Wales and Victoria in order to maintain existing revenue. If rates of taxation in Queensland were the same as those imposed in New South Wales and Victoria, Queensland would lose about £1,150,000.

Under the scheme outlined, it is proposed that the Commonwealth Government should increase the reimbursement payment to Queensland by an amount sufficient to offset the low taxable capacity in that State. In the example given in the preceding paragraphs, the reimbursement payment to Queensland would require to be increased by

22. *Report of Proceedings of Conference of Commonwealth and State Ministers* held in Canberra, 20th and 21st February, 1953, pp. 21 and 29.

£1,150,000 from £25,314,000 to £26,464,000 to give effect to this proposal. For Queensland, Table III would then read:

Queensland	£26,464,000	£2,014,000	74·1	82·6

The three claimant States of South Australia, Western Australia and Tasmania, will, in accordance with the established principles of the Commonwealth Grants Commission in assessing Special Grants, only be expected to impose rates of tax equal to the average of the three larger States. This means, for example, that if Tasmania taxes with severity equal to the average in the three larger States after allowing for the special payment to Queensland, namely, 82·6, its revenue from State taxation and reimbursement payment would be reduced by £323,000 in the foregoing example, but the Special Grant would be increased by the same amount. For Tasmania, Table III would then read:

Tasmania	£5,697,000	£389,000	60·3	82·6

Thus, through an adjustment to the tax reimbursement payment to Queensland and through the operation of Special Grants, it would be a simple matter to reach a situation where the severity of State income taxation in all four smaller States would be the same as the average of New South Wales and Victoria. Those States would then be receiving exactly the same revenue as they formerly received through the operation of uniform taxation. All States would, of course, still be free to vary rates of income tax to produce more or less revenue than they received under uniform taxation.

As already explained, we feel that the scheme suggested above could be introduced from the commencement of fiscal 1957/58. However, we believe it would be more satisfactory if 1957/58 were to be treated as a transition year. The reimbursement grant to be paid to each State in 1958/59 and thereafter would be more soundly based if it were determined from actual taxing experience of the States during 1957/58 and using indices of relative taxable capacity derived therefrom.

It is felt that the scheme outlined above would overcome the major difficulties arising from differences between States in relative taxable capacity. It remains to consider possible means of overcoming the disadvantages that would arise from the point of view of the taxpayer if the States were permitted to re-enter the field of income tax without restriction.

At the present time, tax reimbursement and supplementary grants are paid conditionally upon the States not imposing an income tax. Such a condition would no longer be necessary; instead it is proposed that the Commonwealth should make the payment of tax reimbursement grants conditional upon the States undertaking to adopt certain measures to ensure that the simplicity of uniform taxation is continued.

The first would be that the States should tax personal incomes only, and that the tax should be imposed by each State on residents only. Observance of this condition would avoid complexities which arise when States attempt to tax absentee income earners. Taxable capacity appears to be affected only slightly if calculated on a residence rather than an origin of income basis.[23]

A second condition should be that the States adopt the Commonwealth Income Tax Assessment Act. That is, they should adopt the same definition of earnings in determining gross income and allow the same concessional deductions from gross income in determining taxable income. Thus, taxable income for State taxation purposes would be identical with taxable income for Commonwealth purposes, except for the exemption of Commonwealth loan interest.[24] The prospectuses of all Commonwealth loans have provided that the interest will be free from State taxation. However, no serious administrative difficulty need arise on this account because such interest must even now be shown separately on tax returns because of the tax rebate of 2/- in the £ which is allowed.

There would undoubtedly be political difficulties at the outset in requiring the States to adopt the Commonwealth Income Tax Assessment Act in its entirety. However, such difficulties should not prove insurmountable. In any event there would be considerable scope for any State to make such adjustments as it desired for political reasons in the incidence of its income tax by appropriate variations in the rates of State tax applicable to given income grades.

Thirdly, a condition of payment of tax reimbursement grants should be that the Commonwealth should act as the agent of the States for the purpose of collecting the tax. This would ensure that the individual taxpayer would be required to complete only one taxation return and pay one (joint) demand.

Subject to these conditions, a State would be free to impose rates of taxation in any form it chose. The adoption of uniform assessment laws would do no more than ensure that taxable incomes would be the same for Commonwealth and State purposes. A State would be free when enacting its annual income tax rating act to fix such schedule of rates at it chose. It would be extremely simple and convenient if each State fixed a rate equal to a given percentage of the Commonwealth tax for a given taxable income.[25]. Such percentage could be constant

23. See Report by Treasury Officers, *op. cit.* p. 32.

24. We do not favour allowing State taxation paid as a deduction for Commonwealth income tax purposes as was the case pre-war.

25. On the basis of the scheme worked out in this Section, the Commonwealth would retire from the field of personal income tax to the extent of 4·53% of existing Commonwealth tax. The States would then have to impose rates equal to 4·73% of the reduced Commonwealth rates to obtain the same revenue. It would be hoped that the Commonwealth might voluntarily retire from the field to a greater extent, say, 5%, on the above figures.

throughout all ranges of taxable income, or increase or decrease if a more or less progressive scale were desired. Alternatively, a State could devise its own schedule regardless of the Commonwealth.

7. *Appraisal of the Suggested Scheme*

Under the scheme outlined above, each State would be required to accept responsibility for raising some income tax revenue, or forgo the equivalent revenue it would receive by way of supplementary grant. Each State would be free to decide whether it would impose State income tax of such severity as would yield more or less than it previously received by way of supplementary grant. It would balance the burden of additional taxation against the social advantages arising from expenditure of the additional taxation revenue. In this way the States would be given a flexible source of revenue. At the same time the States would be called upon to share with the Commonwealth the political responsibility associated with the imposition of income taxation. The States would be responsible at the margin for their own revenue.

The scheme as suggested would have advantages for both States and the Commonwealth. The States would be in a stronger financial position to the extent that they would once again have command of a flexible source of revenue. The revenue they formerly received from the Commonwealth as supplementary grants would no longer be subject to arbitrary determination by the Commonwealth. Some of the discontent expressed by the States at the present uniform taxation system has undoubtedly been due to the steady reduction by the Commonwealth in recent years in the amount of the supplementary grants.[26] The difficulties that arise at Premiers' Conferences in determining the amount and distribution of supplementary grants would be avoided. The Commonwealth has complained that in recent years there has been a tendency for State Premiers to make inordinate demands upon the Commonwealth for funds to finance new services. The Commonwealth has questioned whether the States would have been prepared to assume the political responsibility for raising the additional revenue if they had been obliged to impose their own income taxation. The Commonwealth would still collect 90-95 per cent of total Commonwealth-State income tax revenue, and thus would still be in a position to use income tax as an important instrument of fiscal policy.

As already stated, it would be desirable, and much simpler, if State income tax rates in each State were expressed as percentages of Commonwealth rates. This would involve the Commonwealth Government in fixing its rates of income tax as early as possible to avoid undue

26. In 1951/52, the supplementary grant was £33·6m. It has been reduced progressively in subsequent years thus: 1952/53—£27·1m.; 1953/54—£21·9m.; 1954/55—£19·9m.; and 1955/56—£14·2m.

delay in the preparation of State budgets. In any event the Commonwealth rating act would need to be determined not later than, say, April in any year.

The process of putting the scheme outlined into operation would not involve any Constitutional amendment. The States would need to pass legislation adopting the Commonwealth Income Tax Assessment Act in force at the time. Each State would need annually to pass its own income tax rate act. The Commonwealth would need to pass certain machinery legislation to enable it to assess and collect State income tax. It would also be necessary for the Commonwealth to delete Section 5 of the States Grants (Tax Reimbursement) Act, 1946, which makes the payment of reimbursement grants to the States conditional upon their refraining from imposing an income tax. This section would be replaced by a provision that if a State imposed an income tax and wished to remain eligible for reimbursement grants, it must (a) adopt the Commonwealth Income Tax Assessment Act, so far as it relates to individuals, in its entirety; (b) impose an income tax on individuals only; (c) tax only individuals residing in the State; and (d) make an agreement with the Commonwealth for it to assess and collect such tax.

In practice, the Commonwealth would continue to collect individual income tax as at present. When both Commonwealth and State rates for a financial year had been decided, a schedule of weekly and fortnightly deductions would be calculated separately for each State, and issued to employers in order that the present system of "pay-as-you-earn" might continue. At the end of the financial year, the taxpayer would fill in a single return, providing for a single calculation of taxable income, but two calculations of the amounts of tax payable. The taxpayer should be able to ascertain how much tax was payable to the Commonwealth, and how much to the State. Thus, the simplicity of uniform taxation would be maintained.

The remaining matter to be considered is the relationship between the operation of such a scheme and the payment of Special Grants by the Commonwealth under Section 96 of the Constitution.[27]. At present the three smaller States, South Australia, Western Australia and Tasmania, receive Special Grants. Under the principles and methods adopted by the Commonwealth Grants Commission in assessing the amount it recommends should be paid to a claimant State by way of Special Grant, a claimant State would be required to impose a rate of income tax equal only to the average rate imposed in the three standard States of New South Wales, Victoria and Queensland. To the extent to which its taxable capacity was relatively low and as a

27. Section 96 provides that ". . . the Parliament may grant financial assistance to any State on such terms and conditions as the Parliament thinks fit". Under the Commonwealth Grants Commission Act, 1933, any claims for assistance under this Section are referred to the Commonwealth Grants Commission for recommendation.

result the standard rate yielded less revenue per head, the deficiency would be made good through the medium of the Special Grant. However, if a claimant State chose to impose higher than standard rates of taxation for the purpose of providing better than standard services, this would have no effect on the level of its Special Grant. Similarly, if a claimant State were to impose lower than standard rates of taxation and as a result provided lower than standard services, the Special Grant would still be unaffected. The taxpayers of claimant States would be protected against the liability of having to pay higher taxation than ruling in other States in order to obtain the same level of services.

Thus, through the agency of a special subvention to Queensland as already explained, and the principles and methods of the Commonwealth Grants Commission, one of the major drawbacks of the scheme outlined earlier could be overcome. Combined Commonwealth and State rates of income tax throughout Australia would be uniform except to the extent that different decisions were made concerning the standards of services in each State.

8. *Conclusion*

To sum up, we envisage a scheme under which the States would re-enter the income tax field to raise revenue to replace supplementary grants. The States would be restricted to the taxing of individuals, according to State of residence. They would continue to receive reimbursement grants subject to certain conditions, including the adoption of a uniform assessment act. Financial inequalities between States could be offset by a compensating reimbursement grant where necessary or by Special Grants under Section 96 of the Constitution.

A scheme based on these principles would be essentially a compromise designed to overcome the disadvantages while retaining the manifold advantages of uniform taxation. In so far as it is a compromise, it has shortcomings; but any scheme will have shortcomings because there are no solutions as such to the financial problems inherent in a federal system.

It has been questioned whether there is a real will on the part of the Governments concerned to alter the present pattern of Federal-State financial relations in Australia. If they are satisfied with the present system, the trend towards financial unification will continue. If this trend is to be arrested, the States must assume greater financial responsibility. Although there has been much talk of the need for a complete revision of Federal-State financial relations in Australia, there has been surprising hesitancy in suggesting alternative schemes to the present system of uniform taxation.

K. J. BINNS
L. V. BELLIS

Hobart.

TOWARDS A THEORY OF INDUSTRIAL CONCENTRATION*

If problems had sensitive bodies, surely one of the most bruised from intensive tugging and pulling and prolonged buffeting back and forth between contestants would be the problem of the relative efficiency of a "competitive" and a "concentrated" economic structure. The weight of economic theory has for the most part been on the side of the case stressing the virtues of small-scale competitive industry while history has somewhat disingenuously, and not always politely, pursued a contrary course. In this paper I shall be concerned with the economics of the development and persistence of industrial concentration; I shall have little to say about the efficiency of an economy dominated by a few large firms compared to that of an economy of many small firms, about cartels, and competitive practices, or about the ways in which "monopoly power" is exercised. These questions have been extensively explored, whereas very little attention has been given to an analysis of the *process* through which any particular pattern of industrial concentration arises.

The most generally accepted explanations of the development and persistence of concentration attribute it either to economies of large-scale production and large-scale organization—an alleged lower cost of production and distribution in larger firms—or to monopolistic practices and restrictions on competition and entry. The economies of large-scale production or the advantages obtained from monopoly power have served not only to explain the emergence and persistence of concentration but also to provide the criteria for appraisal with approval or condemnation. In the following discussion both scale economies and monopoly play an important role, but have a somewhat different significance from that usually attributed to them.

For every industrializing economy it is probably safe to predict that in the absence of public action preventing it, relatively large firms will develop—large not only with respect to the total output of, or total resources used in, particular product lines (or "industries") but also with respect to output and resources in manufacturing as a whole. In time a few of these firms will become so solidly established that a more or less permanent "pattern of dominance" will emerge in the economy, at least in the older industries, and a high proportion of industrial activity will become concentrated in the hands of a few

* This paper was originally presented to the Canberra Branch of the Economic Society of Australia and New Zealand. I am indebted to the staff of the Economics Department of the Australian National University for helpful discussion and criticism, and to the John Simon Guggenheim Memorial Foundation for the fellowship which made possible my research in Australia.

large firms. This seems to have been the general course of events in most countries since the end of the 19th century when the increasing use of the corporate device immeasurably widened the "productive opportunities" of the individual firm. It is part of the process that leads to what Schumpeter has called "trustified capitalism"—a capitalism in which a few large firms are of dominating importance and in which direct competition between firms is severely restricted and often absent for all practical purposes.

The analysis presented here is only applicable to economies where the corporation, or limited liability company, is the predominant form of private business enterprise. Hence historically it is not relevant for the period before the last quarter of the 19th century. From this point of view Australia is in some ways a "new" industrial country. Many of her important industries are of very recent origin and many of her largest firms were incorporated only in the last 25 years. There is little question that industry in Australia is already highly concentrated, but to obtain a reasonably accurate estimate of the degree of concentration is extraordinarily difficult. The consolidated corporate entity is the relevant unit for a study of concentration, but statistics of the size of firms on a consolidated basis have not been compiled for Australia, nor even of the number of firms. Income and payroll tax statistics are for the most part on an unconsolidated basis, and because it is the custom for firms to create separate incorporated subsidiaries for their various specialized lines of activity instead of creating "divisions" of one corporation, a single large firm may be listed as twenty or more separate companies in the statistics. Employment statistics are on an establishment basis. Furthermore, the state of the balance sheets produced by Australian firms has often been deplored;[1] few firms publish figures of total sales or even of gross fixed assets. In addition, some of the largest firms in the country are subsidiaries of foreign corporations (chiefly U.S. and U.K.) and do not publish any balance sheets at all.

In spite of these difficulties, a rough estimate of concentration can be made by comparing the net fixed assets of the largest firms listed on the stock exchanges (for which consolidated balance sheets are available) to the total net value of land and buildings, plant and equipment in the various branches of industry as published by the Commonwealth Statistician. Such a comparison shows that the twenty largest firms for which the data are readily available possessed nearly one-third of the total assets in manufacturing in 1953/54, the seventy-five largest companies over 45 per cent.[2] Since some of the very largest

1. See, for example, R. F. Henderson, in the *Sydney Morning Herald Finance Supplement*, Oct. 18, 1955, p. 3.

2. Several industries were not considered to be in "manufacturing" for this purpose, notably newspapers, communications, public utilities, retail trade, entertainment, and mining.

firms have been omitted, these figures probably understate concentration for the total population of firms.[3] If one looks at concentration by industries, it appears even greater, as would be expected. In some very broadly defined "products" such as sugar, rubber, steel, paper, or glass, one to three firms control 80 to nearly 100 per cent of the assets in the industry. And for large numbers of lesser individual product groups—e.g. paper of particular types, some broad categories of textiles, gypsum, tile pipe, chemical products—there is effectively only one firm in each group.[4]

These indications of concentration in Australia refer neither to inequality in the size distribution of firms nor to the actual size of firms. Concentration is not a measure of either—concentration, inequality and size are entirely different concepts. The degree of industrial concentration refers to the proportion of whatever economic activity is being measured that is attributable to a stated number of firms. It indicates nothing about the size distribution within the group of largest firms nor within the remaining group of smaller firms. If an entire industry contained two firms only, the industry would be highly concentrated; but if the two firms were of equal size a Lorenz curve would show perfect equality. Extreme concentration implies extreme inequality only if the relevant number of firms is large. Conversely inequality is not indicative of concentration. Inequality will decrease while concentration *increases* if the smaller firms leave an industry. Nevertheless, in an unconcentrated industry, growing inequality must eventually result in increased concentration.

Similarly neither concentration nor inequality are measures of size —an industry may be highly concentrated but none of the firms need be very large. High concentration and large size as well as extreme inequality go together only when the universe consists of large numbers of firms. All three conditions—concentration, inequality and size—are significant in some context but they must not be confused analytically. In this discussion we shall be concerned only with concentration and, for the most part, when I speak of "large" firms, I mean "large" relative to other firms in the economy.

The Growth of Firms

The development of industrial concentration in any economy (or industry) is a question of the relation between the rate of growth of the larger firms and the rate of growth of the economy (or industry)

3. As is usual in concentration statistics, all of the assets of a firm are thrown into the industry in which the firm is classified. For some industries, e.g. brewing, this is a serious error.

4. The figures presented here agree in general with similar estimates of concentration measured by employment which have been developed by Dr. A. R. Hall of the Australian National University, to whom I am indebted for helpful criticism of this paper.

as a whole, measured, of course, in the same units.[5] Concentration increases when the rate of growth of the larger firms is greater than the rate of growth of the relevant industrial sector, decreases when it is smaller and remains constant when the rates of growth are equal.

The factors that determine the size of the increments of expansion that any industrial firm can undertake within a given period of time are the factors that determine the rate of growth of the firm. Even under the most favorable conditions for expansion (for example, perfect elasticity in the supply of the factors of production to the firm and rapidly increasing demand for the products the firm contemplates producing) there will always be a limit to the rate at which the firm can grow—a limit to the kind and amount of expansion it can undertake in a given period. This limit exists because each increment of expansion requires some of the services of managerial personnel who are *already* part of the firm and *have had experience in the firm*. Such services are productive services. They are services that can be obtained only from personnel within the firm who have been closely connected with the firm for some time; they cannot be obtained from men hired in the market-place. Hence they are limited even if a supply of first-rate managers is readily available from outside the firm. Clearly, the availability of such productive services is fixed at any given time, and since some input of these services is required for expansion, they become a "fixed factor" which will limit the amount of expansion that can be undertaken in any given period of time even if demand is high and all other factors are in easy supply.

This limit to expansion, however, does not emerge because the firm has obtained a size or a degree of complexity beyond the power of men effectively to manage. It is a temporary and constantly receding limit. After each increment of expansion the managerial services required for the expansion, but not required to operate the expanded concern, become again available for further expansion, and as a firm grows, new personnel are brought in, thus adding new resources to the firm's ability to expand. Larger and larger increments of expansion become possible, and the firm possessing appropriate managerial services may grow continuously, no clear limit to its ultimate size being discernible, only the rate at which it can grow is limited.[6] The managerial services possessed by different individual firms will vary in quality and quantity. Some firms will have abler, more imaginative and more courageous managers than others, and the larger firms will have a greater number of men in managerial positions than the smaller

5. The phrase "economy as a whole" is used throughout this paper to refer only to the manufacturing sector of the economy.

6. See my paper "Limits to the Size and Growth of Firms", *American Economic Review* Supplement, V. xlv, No. 2 (May 1955), pp. 531-543, for a more developed discussion of this aspect of the growth of firms.

firms and hence a larger supply of managerial services available. But although the kind and amount of such services create an inherent restraint on the maximum rate of growth of any firm, they alone do not determine actual rates of growth in given circumstances. Differences in the rates of growth of different firms could be explained by managerial differences alone only if all firms were in all other respects in an identical position. What a firm can do within the limits set by the capabilities of its management depends on the character of the various alternatives for expansion open to it in relation to the existing activities of the firm. If an envisaged expansion is in lines of activity relatively new to the firm, the managerial services required in the planning and execution of it are likely to be greater than they would be for an equal increment of expansion in thoroughly familiar directions. In the former case management must learn much that is new; in the latter, the expansion itself may be relatively routine—at least within broad limits. Similarly if the expansion is in a direction where intense competition from other firms must be overcome, where consumers have to be induced to buy the product by intensive "education", or where unusual efforts are required to obtain some of the factors of production needed for the expansion, a proportionately greater input of managerial services will be required.

In other words the less familiar and the more diversified the activities involved in the expansion, the greater the innovation and alteration of productive techniques, the more competitive the market or the greater the difficulty of entering new markets, the less, *ceteris paribus*, will a given management be able to accomplish. Conversely, the more familiar are the problems of planning and executing, the higher the expansibility of demand over the relevant ranges, the more readily available are the factors of production required from outside the firm, the greater can be the expansion undertaken at any given time. Furthermore, larger increments of expansion with a given supply of managerial services are possible when plants are large and use large amounts of capital. In some circumstances, to establish a single large plant will require less of the kind of managerial services discussed above than would be required to expand assets or output to the same extent by establishing numerous small plants. If acquisition or merger is a possible method of expansion, however, both the nature and the extent of expansion are changed. Limits to the rate of growth of a firm over a period will still be present, but the whole problem becomes more complex as I shall show later.

Concentration with Internal Growth of Firms

The general discussion of the factors affecting the growth of firms has been a necessary prologue to our analysis of the development

and course of concentration; increasing concentration in a growing economy implies that the larger firms as a group grow faster than the smaller firms and therefore faster than the economy as a whole. What are the conditions under which this state of affairs will persist? To begin with, we shall assume for analytical purposes that all growth is internal growth; that is to say, we shall provisionally rule out acquisition and merger. The distinction between external and internal growth is an important distinction to make because the nature and consequences of the two kinds of growth may be very different. We can only show this clearly by analyzing them separately. Consequently, in spite of the fact that a discussion confined to internal growth alone will omit one of the most significant and powerful methods by which firms in fact grow, we shall begin that way for reasons which will presently become clear.

Assume that larger and older firms have a competitive advantage over smaller and newer firms in any field they care to enter. This is an extreme assumption, but it will simplify the exposition of the argument and can be dropped at any point without altering in any way the conclusions. In fact, of course, firms that are both larger and older in any economy or industry do tend to have many competitive advantages over smaller or newer firms, no matter how able the management of the latter may be. Their market connections tend to be more extensive, their standing in the capital market greater, their internal funds larger—a successful past record is alone an enormous aid to further advance. They have accumulated valuable experience and by virtue of their size they can take advantage of many technological and organizational economies not possible at smaller scales of operation. These are not "monopolistic" advantages in a restrictive sense nor are they easily removable—they are corollaries of size, experience and a successful past. They permit the large firms to undertake larger increments of expansion with an input of managerial services proportionately less than would be required of a smaller firm planning the same amount and kind of expansion and under similar external circumstances. If we add monopolistic power to the list, large firms are even more favorably situated, but we need not do so in order to establish the point.

Nevertheless, if there is a limit to the rate of growth of all firms, a competitive advantage on the part of larger firms is not enough to ensure the development or persistence of a high degree of concentration—it is a necessary but not a sufficient condition—for we cannot assume that the larger firms will be able to take advantage of all of the opportunities open to them.

Consider the large firms of any economy as a group. It is highly probable (almost certain) that there will be profitable opportunities

for expansion in the economy that they must consider unprofitable and ignore because other uses of their scarce productive services are available which are for them more profitable uses. They must do this even if they should have a competitive advantage over smaller firms in any field of activity they cared to enter. Such productive opportunities may offer good profits to smaller firms even though they are relatively unprofitable for the larger firms, and it will always pay a firm to specialize in the comparatively more profitable lines. Let us call these relatively unprofitable opportunities for production the *interstices* in the economy. Under the assumption that larger firms have an absolute advantage over small firms in everything, it is the interstices in the economy which provide the market opportunities for the smaller firms, some of whom will be more successful than others in filling them. But the rate of growth of small firms as a group will be limited by the rate of growth of these interstices. If the interstices should grow faster than the maximum rate of growth of existing small firms as a group, there is scope for the creation of new firms.

Thus once concentration has developed, and on the assumption that large firms always have an advantage over small firms, the rate of growth of small firms depends on the difference between the maximum rate of growth of large firms and the rate of growth of productive opportunities in the economy as a whole. In an economy where rapid industrial development is taking place, accompanied, we shall assume, by population increases, technological changes, changing demand, and perhaps tariff protection, there are several reasons for expecting the rate of growth of the earlier established and larger firms to exceed that of the economy as a whole for a considerable period. But if the rate of growth of the economy remains fairly consistently at a high level, the point will be reached where concentration will tend to decline.

The firms that will earliest come to the front in manufacturing will be those that are in industries where the kind of advantage held by the large firms provides substantial protection against the easy entry of new competitors. For if a number of firms are constantly attempting to get started and expand in an industry, even established firms possessing substantial competitive advantages will have to work harder to maintain their position, will be less able to expand in large increments and will probably have to accept lower profit rates than would have been the case if entry had been more difficult.

One of the most effective non-monopolistic restraints on the easy entry of new firms is provided by substantial technological economies of large-scale production. It is commonplace that in relatively small markets a large number of firms cannot survive if decreasing costs prevail, and once the more efficient firms have reached the size at which

they can take advantage of technological economies of scale, no other firm can start up in the industry unless it is prepared to begin on the minimum scale. Consequently, even if the output of the large firms cannot keep up with growth in demand, newcomers may be disinclined to enter unless the unsatisfied demand appears very great. In other words, the mere fact that the rate of growth of demand exceeds the maximum rate of growth of the large firms does not create opportunities for new firms unless the discrepancy is very great. On the other hand, the minimum increments of expansion for the existing firms is large where the optimum size plant is large, and in view of the barrier to the entry of new competitors, the managerial services required for expanding in large increments are proportionately less.

The relative ease of expansion rather than lower costs of production in large firms operating several plants is, I submit, the basic reason why concentration is often highest in those industries (and countries) where there are substantial economies of large-scale production to be obtained. The allegation that the large firms are large because the size attained is more efficient and permits lower cost production is hard to support where the firms produce, as they usually do, many very different products in many separate plants. Few, if any, of the fifty largest firms in Australia consist of a single plant, and few produce only one, or even a closely connected, set of products. Technological economies of scale relate almost exclusively to the plant —not to the firm—and if a single firm operates through more than one plant, in only a few cases can it be demonstrated that technological economies of scale cause the average costs of production to be lower when the two plants are in the hands of one firm than they would be if the plants belonged to two separate firms. There are times when economies in scheduling the flow of production or in handling fluctuations in demand can be obtained by multi-plant firms but I have come across only a few examples where the evidence was clear. One important exception in a small economy lies in the economies that can be obtained through vertical integration when the final product is produced on a large scale and requires a large and even flow of supplies of high quality or subject to rigid specifications. But in general where firms own many separate plants, especially if the plants are scattered geographically, and where firms produce many different products, the technical economies of large-scale production in relation to the size of the market are by no means sufficient to explain the size of firms.

Similarly the organizational (or managerial) economies of large-scale operation are important up to a point. But even where large firms have a reputation for efficient management (which does not seem to be the reputation of all of the large firms in Australia), managerial

discussions usually emphasize the difficulties of developing an organization and management structure that will prevent costs from *rising* as the firm grows. It is only at a relatively small size of firm that management itself seems to think that greater size would lead to a more efficient use of management. An additional increment of expansion may be considered profitable and efficient by a given firm, but not because it makes the firm bigger. This paradox may be resolved if we realize that growth itself may be efficient apart from size. It is much easier to see in any given case why a particular expansion has taken place, than to see why the resulting size is especially efficient. If one examines the process of growth and inquires what it was that promoted the various increments of expansion of individual firms (still leaving aside acquisition and merger) one finds that the economies of growth are significant. The firm had some knowledge, experience or technological expertise, some established channels of operation, or some other capacity enabling it to take advantage of market opportunities believed to exist. The *process* may have been efficient from the point of view of society as well as of the firm, while it would not necessarily follow that the resulting size of firm could produce more efficiently than smaller sizes.[7]

An imaginary example will illustrate the point. There are economies of scale in the manufacture of glass bottles. Assume a given firm builds a large plant in a particular location. Bottles are not cheap to transport and the optimum size of plant is determined by the size of a *regional* market under such circumstances. The experience of the established firm together with its managerial capacity may make it easier and cheaper for *this* firm than for any other to set up another glass bottle plant in another location to serve another market. Even from the point of view of society this may be the most efficient way of establishing the new plant. But once both plants are set up and in operation, it does not follow that cost of production will necessarily be lower in either plant than they would be if the firm were split up and each plant operated by a separate firm. Economies of scale do not exist if costs are not raised by reducing the size of the unit. Yet the expansion by one firm was itself an efficient procedure.

The process of growth may be efficient for firms of all sizes and regardless of the existence of economies of large-scale production. Nevertheless, firms are likely to be the largest and concentration the greatest in industries where large plants are the most efficient. In the earlier stages of industrial development, high concentration in manufacturing will develop if the market is small in relation to the optimum size of plant even in industries where the optimum is very small, and

7. See "Limits to the Growth and Size of Firms", *op. cit.*, especially pp. 541-3.

certainly in the "basic" industries—steel, glass, paper, metals, etc. And if these latter bulk large in total industrial output, the economy as a whole may begin to take on a concentrated aspect. As the economy grows, concentration may increase, largely because of the relative ease with which the large firms can expand and take advantage of productive opportunities as they develop. But in time, if economic growth is high and sustained, concentration will tend to decline. In a rapidly growing economy, even in one no larger than that of Australia, the period of increasing concentration would not last very long in the absence of merger, political protection of large firms or gross monopolistic restriction.

In a relatively short time the increase in incomes and the general stimulus to activity provided by the expansion of the rapidly developing firms will weaken the forces making for increasing concentration by widening the opportunities for small and new firms. The opportunities created for smaller firms by the growth, and in particular, by the technological innovations, of the larger firms, are often stressed by the large firms themselves when they want to emphasize what they regard as the generally beneficial effects of their own growth. In addition, many of the fields which the new developments open up will not continue to remain the preserve of a few firms, and barriers to entry will give way before the pressure of demand and the eagerness of potential entrants. The more rapid and sustained is the rate of growth of the economy the sooner will an initial degree of concentration tend to decline even when large firms have an advantage in any field they care to enter. The advantages of the large firms are primarily advantages easing for them the task of expansion. Nevertheless, if a firm is to maintain a given rate of growth, the absolute increments of expansion must become ever larger. After a point it becomes increasingly difficult to maintain the pace. As a firm grows it branches out, extends into new fields of production, backwards, forward and horizontally. The increments of expansion become more complex and the problems of further expansion less familiar. In addition, the large firms may come into competition with each other. For these and other reasons, it is likely that the rate of growth of the very large firms will tend to decline slightly at some point, although absolute growth may still be very great.

It should be noted, however, that even if the rate of growth of the economy exceeds the maximum rate of growth of the largest firms, the subsequent decline in concentration shows itself in an increasing number of firms in the category of "large" firms when the same criteria for defining "large" are retained. There is no reason for assuming that the growth of large firms will ever become negative and the firms actually shrink in size, for the rate of decline in their growth

may be very small, never reaching zero.[8] Hence, although concentration may decline in that a larger number of firms than before is producing a given percentage of total output (or a given number of firms a smaller percentage), there need be no change in the size distribution of firms.

The tendency for a decline in concentration will be weakened and perhaps even removed if the economy is subject to severe fluctuations in activity. Fluctuations in economic activity are reflected, of course, in fluctuations in the rates of growth of firms in the economy. But frequent and severe fluctuations encourage concentration in several ways even though the largest firms are adversely affected during depressed periods. If the periods of high activity are short lived in relation to the time it takes the larger firms to reach their maximum rates of growth, concentration will still be increasing when the boom breaks. A subsequent steep fall in activity will only further increase concentration, not alone because the interstices open to smaller firms rapidly shrink but also because the financial position of larger firms is likely to be such that far fewer of them will fail. The managerial services available for expansion may fall to zero as the managerial difficulties of maintaining (or minimizing the deterioration of) the firm's position increase. Similarly the managerial effort required for expansion may rise sharply as markets contract. The maximum rate of growth of all firms will decline, but for the smaller firms as a group the decline is likely to be greater than for the larger firms.

The Role of Merger and Acquisition

In the preceding discussion I have indicated that the introduction of acquisition or merger makes substantial differences to the analysis. These differences are of three kinds: (1) a much more rapid rate of growth of firms is made possible for longer periods; (2) the economies of growth are much more difficult to establish; and (3) the structure of the firm may alter, raising serious questions as to what we are talking about when we speak of an industrial firm.

Acquisition or merger may be treated as simply another method of expansion but a method which is quick, relatively easy, and often

8. This brings up the problem of what we mean by an industrial firm, which is touched on below but which we cannot explore in any detail in this paper. From an economic point of view, an industrial firm should be distinguished from a financial holding company, and the rate of growth of the firm *as a producing entity* may fall sharply if expansion involves increasing ownership of productive assets which are not effectively administered as part of the *production* activities of the firm. This is, of course, one reason why total assets including cash and investments, are not an appropriate measure for our purposes of the size of the firm. There may be a negative correlation after a point between the rate of increase of the expansion potential of the firm and the rate of increase of financial assets, and a decline in the rate of growth of the firm becomes masked if an increment in financial assets is treated as an increment of growth.

cheap. The task of breaking into markets against competition, of building up "good will" and of establishing the myriad of business connections which are so important to the success of a business firm, is greatly reduced; a collection of valuable and scarce factors of production may be obtained at one stroke; often no new finance is required, the acquisition being effected by an exchange of shares. Hence expansion of a given firm may take place much more rapidly and in much larger increments.

Incentives to merger and acquisition are particularly strong when the rate of growth of the economy is high and the economy is well started on the path of industrialization (after all, acquisition is not a possible method of expansion unless there are already established firms that can be acquired). In such circumstances the rate of expansion attempted by firms tends to strain the productive services available for expansion, while at the same time extensive opportunities for profitable growth are to be seen on all sides by the enterprising entrepreneur. The acquisition of other firms will not only appear particularly attractive but at times almost "necessary" to a particular firm as a safeguard for its long-run position if other firms are observed to be taking advantage of opportunities so closely related to that firm's own activities that they appear as a competitive threat. In addition, acquisition will be attractive if continued expansion appears likely to be hindered by bottlenecks in the flow of supplies such that integration by merger seems the quickest and cheapest way of eliminating them.

Similarly, merger will tend to be unusually prevalent when economic growth is stimulated by important innovations or discoveries that are not, even in their inception, substantially the preserve of existing firms. Under these circumstances, there may be a scramble of old and new firms to gain a footing in the new fields of activity. If entry is easy there will be many failures, the environment will be favourable for acquisition and the few who survive the initial struggle will often gain their advantage in this way. When competition is intense, attempts are often made, with varying degrees of success, to amalgamate into one firm all, or nearly all, the competing firms in an industry.

Expansion by acquisition and merger *may* involve economies of growth similar to those discussed in connection with internal expansion. The process may result in a more effective use of the acquiring firm's resources, it may make better use of scarce managerial services and, in addition, capital losses to the community may be averted when an efficient firm acquires and restores to efficient operation an otherwise inefficient and failing firm. On the other hand, the very ease and cheapness of acquisition and the type of business ability required to effect it often results in the mushrooming of large loosely connected

financial "groups" masquerading as industrial firms and claiming to possess economies of large-scale organization. An important distinction between internal and external growth lies in the fact that internal growth requires planning, building, organizing, and coordinating each increment of expansion such that the expanded concern remains an administratively integrated organization—an industrial firm in the sense used here. The same planning and integration *may* be involved when growth is by acquisition, but it *need* not and often *is* not. Successful and rapid expansion through acquisition may be effected with merely a well-developed financial and bargaining skill, an aptitude for making financial "deals". The purpose served may be exclusively to enhance the dividend earning power of the promoters, having no effect on the organization of production other than to create scope for the exercise of monopoly power over the organization of the market. And the ability of the merger-blown concern to survive in the market may be related only to its ability to prevent the effective rise of competition.

A firm growing in this way—especially if the growth is extremely rapid—takes on the character of a financial holding company, or financial "group". It is, perhaps, significant that the term "group" is so widely used in Australia to characterize some of the largest industrial organizations. One of the characteristics of an industrial firm is that the kind of production it engages in does not change rapidly with changes in market conditions but changes slowly over time, one activity growing out of, or at least connected with, the others. If rapid acquisition has resulted in bringing together a loosely organized collection of producing units, the resulting "firm", if it should be called an industrial firm at all, is of a peculiarly unstable type from this point of view. It may reach a point where its assets, that is to say, the plants and companies it runs, are acquired and disposed of in a fashion not very different from the way in which an investment portfolio is managed. It may break up entirely; or it may go through a fairly prolonged "shaking down" period, where growth virtually ceases or continues very slowly as the "firm" digests, so to speak, its acquisitions. These are the alternatives and, since the first two remove the firm from the scope of this discussion (we are not analyzing the concentration of financial power), only the last is relevant. Again it appears that in the last analysis there is a limit to the rate of growth of the firm even when merger and acquisition are permitted.

The limit is set by the rate at which new acquisitions can be effectively integrated into the firm. If this rate is exceeded at any time a slower rate of growth than would otherwise have taken place will be forced on the firm at a later time, and the average rate of growth over the two periods will be lower. Nevertheless, if the acquisitions

have given the firm advantages protecting it from competition—and in this case such advantages are likely to be of a restrictive monopolistic sort—the average rate of growth over the longer period may be greater than would have been possible in the absence of the acquisitions.

Acquisition and merger will increase concentration, particularly in the short period, but also over the longer period. The conclusions arrived at earlier, however—that concentration will eventually decline if a high rate of economic growth is maintained—are not altered, but the decline will set in much later. Once a high degree of concentration is attained in any industry, expansion by merger becomes a much less significant element in the growth of the largest firms not only because there are fewer suitable firms available for acquisition but also because a small acquisition is still a small increment of expansion for a very large firm, and mergers of "giants with giants" become quite rare. Thus a point is reached where acquisition and merger can no longer significantly lift the maximum rate of growth for the large firms or provide significant offsets to the other factors making for a decline in concentration. But before this point is reached the industrial structure of the economy will be highly concentrated indeed and the rate at which concentration may thereafter decline may be of little practical significance for the then existing generation.

EDITH T. PENROSE

The Johns Hopkins University.

THE EFFECT OF INFLATION ON COMPANY PROFITS AND FINANCIAL STRUCTURES[1]

1. *The Accounting Effects of Inflation*

The great inflation that followed the 1939-45 war produced striking changes in the profits and financial structures of Australian companies. Inflation affects profits by reacting on sales volume, by influencing the level of costs and by changing the relationship between costs and prices. Since manufacturing and trading companies generally determine prices by reference to cost, pricing policy becomes particularly important in an inflation; and the level of profits differs according to whether prices are determined on the basis of original cost or current replacement cost. Irrespective of the pricing policy adopted, however, inflation influences the recorded level of business profits through what may be described as its accounting effects. These effects result from conventional methods of profit measurement, which record stocks and depreciation of fixed assets on the basis of their original cost and ignore the current cost of replacement.

Inflation affects financial structures both by increasing the need for funds and by affecting the financial resources available to meet this need. Additional funds are required to finance the replacement of stocks and fixed assets at higher costs. The funds available to businesses from internal sources are influenced by the pricing policies and accounting conventions already mentioned, while inflation also affects the volume and source distribution of external finance. Distinct from these pricing and accounting effects, but partly resulting therefrom, some writers have distinguished other influences which affect the sources and uses of business funds. These they call the trade cycle effects, since they represent conscious changes in saving and investment decisions resulting from changes in recorded profits and in their turn influencing the magnitude of the pricing and accounting effects.[2]

During the period under consideration, 1945/46 to 1951/52, the Australian economy was also subject to pressure from another source, which has tended to complicate the task of analysis. The effects of inflation already distinguished—the pricing effects, the accounting effects and the trade cycle effects—occurred under conditions of rapid economic expansion, which would have profoundly influenced the

1. The authors acknowledge their indebtedness to Mr. J. G. Medwell for carrying out much of the laborious statistical work involved in the preparation of this paper.

2. For example see K. Lacey, *Profit Measurement and Price Changes* (Pitman): W. T. Baxter, "Inflation and Accounting Profits", article in *Westminster Bank Review*, May 1952.

sources and uses of company funds even if price levels had remained stable. It is not always clear whether inflation or expansion was the principal factor causing changes in profits and financial structures.

In this paper we are mainly concerned with the accounting effects of inflation. An attempt is made to measure the extent to which the application of conventional accounting procedures during the post-war inflation affected company profits and capital structures. Inflation distorts the measurement of profit in that prices applicable to different points of time are used to value cost and revenue items. In particular, conventional accounting procedures affect the level of profits to the extent that stocks or fixed assets used are brought into account on the basis of original cost rather than current cost. Inflation also contributes to capital erosion or undercapitalisation. The determination of profits on the basis of original costs preserves the money capital contributed by shareholders, but this will not be sufficient, by itself, to provide for the replacement of stocks or fixed assets at higher prices. Unless profits can be ploughed back by the business, therefore, it will become undercapitalised and fresh capital will have to be raised in order to maintain the same volume of fixed assets and working capital.

The accounting effects of inflation result from the application of accounting conventions or postulates which provide that transactions shall be recorded on the basis of their historical money values. These postulates cannot be discarded without overthrowing the whole basis of accounting measurement, but the effects that have been described may be avoided by making certain adjustments to accounting profits to offset the influence of inflation. Accounting profit is in any case an unsuitable concept on which to base many business policy decisions. In determining prices or deciding upon changes in output, for example, accounting profit is largely irrelevant. The concept of income which is important for policy-making purposes may be described as current or economic income, defined as the difference between revenues expressed in current prices, and costs and expenses also expressed in current prices. Fortunately, accounting profit may be reconciled with current income, and the accounting effects of inflation may be avoided, by introducing procedures for the adjustment of accounting profit figures. These procedures and their underlying assumptions will now be described.

In accounting, changes in the value of money are conventionally ignored in the profit measurement process. To measure current income, however, changes in the value of money must be taken into account. In both cases we are concerned with the measurement of profit or income for a given period, say a year. If changes in the value of money *within* a particular period are ignored in the measurement of current income,

then the difference between accounting profit and current income may be narrowed down to changes in the prices used to value items of cost and revenue carried forward from one accounting period to another. On the basis of this simplifying assumption, current income *for a period* may be defined as revenues expressed in current prices *of the period* minus costs and expenses expressed in current prices *of the period*. Changes in the prices of revenue items within the period are assumed to be offset by changes in the prices of cost and expense items within the period. Accounting profit, on the other hand, represents revenues actually received minus costs and expenses expressed in original or historical prices. However, in the measurement of accounting profit most items of revenue and most costs and expenses are expressed in prices of the current period, and accounting profit only differs from current income in respect of the valuation of those items brought forward from past periods, e.g. prepaid and accrued expenses, revenue received in advance and revenue accrued, depreciation and the opening stock element in cost of goods sold. Of these all except the last two are so insignificant that for practical purposes they may be ignored. This leaves two major items of cost, depreciation and opening stocks, which in the measurement of accounting profit are recorded in terms of prices appropriate to past accounting periods, but which need to be valued on the basis of current prices in order to measure current income.

In deriving accounting profit, depreciation is calculated on the basis of the original money cost of the asset. In estimating current income, however, depreciation needs to be based on the current replacement cost of the asset, which reflects the current cost of using the equipment.[3] The relationship between accounting depreciation and current depreciation may therefore be expressed as follows:

$$\text{Current Depreciation} = \text{Accounting Depreciation} \times \frac{\text{Current Replacement Cost of the Asset}}{\text{Original Cost of the Asset}}$$

The difference between current and accounting depreciation figures in any period may be defined as the accounting charge multiplied by the percentage rise in the asset's replacement cost since it was originally purchased. It should be noted in passing that depreciation based on current replacement cost will not necessarily provide sufficient funds for the replacement of the asset if replacement cost continues to rise in the future, although it may more nearly do so if the depreciation allowances are invested in assets which themselves rise in value with

3. Replacement cost may be taken to mean the current cost of an identical asset, if available; if not available, the cost of an asset capable of achieving similar performance.

the inflation (e.g. stocks and other fixed assets), and are not held in the form of cash balances and money claims. In general, the difference between accounting depreciation and current depreciation provides a measure of the accounting effect of inflation on company profits and capital structures, so far as the depreciation element of cost is concerned.

Turning now to cost of goods sold, the accounting concept of cost of goods sold may be defined as the original money cost of stocks brought forward from past accounting periods, *plus* the original money cost of stocks purchased during the period, *minus* the original money cost of stocks carried forward into subsequent accounting periods. In determining the current cost of goods sold, theoretically we should ascertain the current cost price of each item of stock sold at the time it is sold. If, however, we adopt the simplifying assumption that changes in prices within an accounting period may be ignored, then current cost of goods sold may be defined as opening stocks *plus* purchases *minus* closing stocks, all valued in current prices. Since purchases and closing stocks are automatically valued in prices of the current period, it is only necessary to ascertain the current cost of opening stocks. Current cost for this purpose is the recorded cost price of stocks most recently acquired, i.e. opening stocks need to be valued in the same prices as closing stocks.[4] The difference between accounting cost of goods sold and current cost of goods sold may thus be measured by the difference between opening stocks valued at original prices, and opening stocks valued at current prices. This difference represents the effect of inflation on company profits and finances arising out of the accounting procedures used to record cost of goods sold.

A simple example will serve to illustrate the procedures necessary to reconcile accounting profit and current income. Let us assume that a company commences the year on 1st January with 1000 units of stock, which cost £1 each when they were purchased; that on 30th June it sells 1000 units at £1/3/- each and buys another 1000 units at £1/2/- each, and that it does not engage in any other transactions prior to 31st December. Other expenses incurred during the period comprise wages, £20; and depreciation of fixed assets, 10 per cent of original cost £100. Current replacement value of fixed assets at 30th June is £110.

Under these circumstances the measurement of accounting profit would take the following form:

4. It is assumed for the sake of simplicity that the first-in-first-out method of stock valuation is used, i.e. the first stocks purchased are assumed to be the first stocks sold.

Sales		£1150
Less: Cost of Goods Sold		
Opening Stocks ..	£1000	
Purchases	1100	
	2100	
Less: Closing stocks	1100	1000
Gross Profit		150
Less: Expenses		
Wages	20	
Depreciation	10	30
Net Profit		£120

If, on the other hand, all these items were expressed in current prices in order to measure current income, the revenue statement would take the following form:

Sales		£1150
Less: Cost of Goods Sold		
Opening Stocks ..	£1100	
Purchases	1100	
	2200	
Less: Closing stocks	1100	1100
Gross Income		50
Less: Expenses		
Wages	20	
Depreciation	11	
		31
Net Income		£19

Conventional methods of accounting therefore overstate profits available for distribution, to the extent that costs of using stocks and fixed assets are brought to account on the basis of original prices instead of current prices. The adjustments necessary to convert accounting profit to current income may be summarised as follows:

Accounting profit		£120	
Less: Stock Appreciation	£100		(Opening stock at original cost multiplied by percentage price appreciation)
Depreciation Adjustment	1		(Depreciation based on original cost multiplied by percentage increase in current replacement cost of fixed assets)
		101	
Current Income		£19	

These adjustments measure the accounting effects of inflation on company profits.

Additional assumptions are necessary in order to show the effects of inflation on company finances. Let us assume that the company's balance sheet at 1st January took the following form:

Creditors	£100	Cash and Debtors	£100
Capital	1100	Stocks	1000
		Fixed Assets	100
	£1200		£1200

If no new assets are purchased during the year, and if all the accounting profit is distributed in the form of taxes and dividends, the sources and uses of funds during the year may be summarised in the following statement:

Sources of Funds	
Retained Profits (or Company Saving)	—
Depreciation Allowances	£10
Reduction in Working Capital (other than stocks)	90
	£100
Uses of Funds	
Increase in Stock Values	£100

The balance sheet at the end of the year may take the following form:

Creditors	£190	Cash and Debtors		£100
Capital	1100	Stocks		1100
		Fixed Assets	£100	
		Less: Provision for Depreciation	10	
				90
	£1290			£1290

Alternatively, the increase in stock values may have been financed, not by borrowing from creditors, but by running down cash or debtors: In either event the effect of inflation is to promote under-capitalisation or capital erosion, since the capital of the company is worth less in real terms at the end of the year than it was at the beginning. The reduction in working capital (other than stocks) is evident from a comparison of the two balance sheets—at the beginning of the period the asset "cash and debtors" was equal in value to the liability "creditors", but at the end of the period the liability exceeds the asset by £90. The short-term financial position of the company has therefore obviously deteriorated. In this example we are concerned only with the problem of replacing stocks at higher prices, but similar effects would show up in the capital and asset structure of the company when the fixed assets have to be replaced.

Adjustments to convert accounting profits to current income, if made as an accounting procedure by transfers to reserves, would automatically offset the effects of inflation on the company's capital structure, as the following statement shows:

Sources of Funds

Company Saving (Increases in Reserves)	£101
Depreciation Allowances	10
	£111

Uses of Funds

Increases in Working Capital (other than Stocks)	£11
Increases in Stock Values	100
	£111

The balance sheet at the end of the period would then take the following form:

Creditors		£100	Cash and Debtors		£111
Shareholders' Funds:			Stocks		1100
Capital	£1100		Fixed Assets	£100	
Reserves	101		*Less*: Provision for Depreciation	10	
		1201			90
		£1301			£1301

It should be noted, however, that the transfer to reserves of the whole of the adjustments may be difficult if taxes and dividends are both based on accounting profit.

The depreciation adjustment, when added to accounting depreciation, makes available for temporary use within the business a total of £11 by way of depreciation allowances. It has already been mentioned that the funds set aside in this way will not necessarily be sufficient to provide for ultimate replacement, because future increases in replacement costs are not provided for in the adjustment made.

2. *The Effects of Inflation on Australian Company Profits and Savings——1945-46 to 1951-52*

The adjustments that have been outlined in Part 1 constitute a general procedure for measuring the accounting effects of inflation on profits and capital structures. This procedure will now be applied to Australian company statistics in order to measure the impact of the post-war inflation on Australian company profits and finances.

In Table I, estimates of profits and savings of all Australian companies (excluding banks and life assurance companies) are presented for the years 1945-46 to 1951-52. The statistics are derived primarily from national income data, but company savings (undistributed profits) are defined as net of increases in dividend and tax provisions. Company savings by our definition represent profits of the current year minus dividends and taxes *payable* out of those profits. Increases in provisions must be added to dividends and taxes actually *paid* in the current year in order to determine the amounts payable out of

TABLE I

Profits and Savings of Australian Companies 1945/56—1951/52

(Excluding banks and life assurance companies)

(£ millions)

	1945–6	1946–7	1947–8	1948–9	1949–50	1950–1	1951–2
1. Taxable Profits	132	159	189	213	252	385	379
Less:							
2. Dividends Paid	43	45	54	61	73	88	96
3. Taxes Paid	51	50	67	71	82	98	147
4. Increase in Dividend Provisions	1	6	3	11	5	5	13
5. Increase in Tax Provisions	0	9	0	9	14	69*	−10*
	95	110	124	152	174	260*	246*
6. Company Saving	37	49	65	61	78	125*	133*

* Subject to revision.

SOURCES OF STATISTICS:

1. National Income and Expenditure 1954/55, Item 2, from which was deducted estimates of the income of life assurance companies.
2. National Income and Expenditure 1954/55 (Item 2a + Item 2b), from which was deducted dividends paid by banks and non-mutual life assurance companies (derived from Finance Bulletins).
3. National Income and Expenditure 1954/55, Item 13a, minus tax payable by banks and life assurance companies (derived from Reports of Commissioner of Taxation).
4. Estimates derived by applying sample results to the aggregate increases in dividends paid (see text).
5. Increase in tax *assessed* on income of current year over tax *assessed* on income of previous year (derived from Reports of Commissioner of Taxation).

current profits. The increases in provisions constitute liabilities of companies and not additions to reserves.

The increase in dividend provisions has been estimated from the aggregate increase in dividends paid, having regard to changes in interim dividends. The annual increase in dividend provisions was derived by estimating the ratio

$$\frac{\text{dividend provision year (n) } \textit{minus} \text{ dividend provision year (n}-1)}{\text{dividends paid year (n}+1) \textit{ minus} \text{ dividends paid year (n)}}$$

for a sample of public companies, and applying the ratio to the aggregate increase in dividends paid between year (n) and year (n + 1).[5]

The increase in tax provisions was estimated by deducting from the tax assessed on company income of a given year (derived from *Reports* of the Commissioner of Taxation) the tax assessed on income of the previous year. Thus we calculated, not the increase in provisions actually made by companies, but the increase in provisions that should have been made in order to meet the tax actually payable in the following year. It has been assumed, however, that no provision was necessary in 1950/51 in respect of the 10 per cent advance payment of tax payable by companies in 1951/52 on their 1951/52 incomes.

The impression given by Table I is that company savings increased substantially during the post-war period, following the trend in profits. In Table II, company profits and savings have been adjusted in the manner outlined in Part 1. Current or economic income, which is a measure of income available for distribution, shows a much smaller rate of increase than taxable profits; and when dividends and taxes are deducted from current income, adjusted company savings are seen to decline during the period, becoming negative in 1951-52. The figures shown are expressed in current prices, and the reduction in real savings (i.e. savings at constant prices) would be even greater.

3. *Calculation of the Depreciation Adjustment and the Stock Appreciation Adjustment*

The adjustments carried out in Table II need to be considered in some detail. Statistics relating to opening and closing values of plant and machinery, additions and disposals and actual depreciation allowances claimed, have been derived from *Reports* of the Commissioner of Taxation. However, estimated initial depreciation allowances have been added back to company profits, since they represent reductions in taxable profits that should be ignored in estimating depreciation based on current replacement values of assets. Unfortunately, no official statistics of the amount of initial depreciation allowances

5. Dividends paid by companies included in the sample amounted to approximately 10 per cent of total dividends paid by public and private companies.

TABLE II

Adjusted Profits and Savings of Australian Companies

(Excluding banks and life assurance companies)

(£ millions)

	1945–6	1946–7	1947–8	1948–9	1949–50	1950–1	1951–2
1. Taxable Profits	132	159	189	213	252	385	379
2. (a) Initial Depreciation Allowances	2	5	7	10	21	36	—
(b) Depreciation Adjustment (based on ordinary depreciation)	—	—1	—3	—4	—7	—13	—20
3. Stock Appreciation Adjustment	—3	—11	—40	—43	—65	—142	—133
4. Current Income	131	152	153	176	201	266	226
Less:							
5. Dividends (Paid+Increases in Provisions) ..	44	51	57	72	78	93	109
6. Income Taxes (Paid+Increases in Provisions) ..	51	59	67	80	96	167*	137*
7. Adjusted Company Savings	36	42	29	24	27	6*	—20*

* Subject to revision.

SOURCES:

1. See Item 1, Table I.
2. See text.
3. See text.
4. Item 2 (Table I) + Item 4 (Table I).
5. Item 3 (Table I) + Item 5 (Table I).

claimed are available. The amount of ordinary depreciation which would normally have been allowed was calculated by applying the average rates of depreciation on depreciated values in the year prior to the introduction of initial depreciation allowances (1944/45) and the year after their discontinuance (1951/52) to the depreciated values in the intervening years. Initial depreciation allowances were then estimated by deducting these estimates of ordinary depreciation from the published figures of actual depreciation. The progression of the resulting initial depreciation allowances (Item 2a, Table II) seems quite reasonable in relation to the purchase of new assets. The large allowances in 1949/50 and 1950/51 were due, of course, to the increase in the maximum rate from 20 per cent to 40 per cent.

In order to calculate the depreciation adjustment (Item 2b, Table II) an index of replacement costs of fixed assets was constructed by combining the Commonwealth Bank Import Price Index for metals and machinery (including vehicles), and an index of domestic prices of plant and machinery derived from estimates of Dr. S. P. Stevens,[6] giving each component a weight of 50 per cent. These weights were based roughly on the proportion of imported capital equipment to home-produced capital equipment during the period, but the size of the depreciation adjustment is hardly affected by varying the proportions to give either component a weight of 75 per cent.

The principal problem in measuring the depreciation adjustment was to convert fixed assets to values expressed in current prices, in order to ascertain the difference between depreciation based on original cost and depreciation based on current cost. This was difficult because the fixed assets in existence at any point of time would have been purchased over a considerable period during which prices would have varied. To meet this difficulty the following procedure was adopted. On the basis of the simplifying assumptions that all assets in existence at 1st July, 1945, were valued in 1944/45 prices, and that the reducing balance method of calculating depreciation was used by all companies, the current replacement value of fixed assets held at the beginning of each year was calculated by applying the index for the rise in prices to closing asset values in the previous year. Additions and disposals in the current year were then brought into account. The next step was to calculate current depreciation by means of the formula:

$$\text{Current Depreciation} = \text{Accounting Depreciation} \times \frac{\text{Current Replacement Value of Fixed Assets at the Beginning of the Year}}{\text{Depreciated Original Cost Value of Fixed Assets at the Beginning of the Year}}$$

The difference between current depreciation so calculated and account-

6. *An Index of Australian Manufacturing Production;* Paper presented to Section G of the Australian and New Zealand Association for the Advancement of Science, Canberra, January 1953.

ing depreciation (based on original cost but excluding initial allowances) was the depreciation adjustment. Using statistics from the *Reports* of the Commissioner of Taxation, the procedure may be illustrated as follows:

Calculation of Depreciation Adjustment

£ millions

Date	Stock of Plant and Machinery		Depreciation	
	Original Cost	Current Cost	Original Cost	Current Cost
July 1st, 1945	173	173*		
+Additions, 1945/6 ..	22	22		
	195	195		
−Disposals, 1945/6 ..	2	2†		
	193	193		
−Depreciation, 1945/6 ..	17	17‡	17	17‡
June 30th, 1946	176	176		
July 1st, 1946	176	186*		
+Additions, 1946/7 ..	38	38		
	214	224		
−Disposals, 1946/7 ..	6	6†		
	208	218		
−Depreciation, 1946/7 ..	17	18‡	17	18‡
June 30th, 1947	191	200		
July 1st, 1947	191	225*		
+Additions, 1947/8 ..	50	50		
	241	275		
−Disposals, 1947/8 ..	4·5	5†		
	236·5	270		
−Depreciation, 1947/8 ..	19·5	23‡	19.5 (say 20)	23‡
June 30th, 1948	217	247		
July 1st, 1948	217	262*		
.	.	.		
.	.	.		
.	.	.		

* Closing stock previous financial year at current cost $\times \frac{\text{price index current financial year}}{\text{price index previous financial year}}$

† Disposals at depreciated value $\times \frac{\text{price index current financial year}}{\text{price index 1944/45}}$

‡ Depreciation at original cost $\times \frac{\text{stock of fixed assets at current cost at beginning of current financial year}}{\text{stock of fixed assets at original cost at beginning of current financial year}}$

The depreciation adjustment calculated above relates only to plant and machinery. It will be seen later (Table III) that depreciation on buildings owned by companies other than banks and life assurance companies is relatively small, and any depreciation adjustment resulting from the post-war inflation would be negligible. Apart from this the possible sources of error include:

(a) the difficulty of dissecting actual depreciation allowances into ordinary depreciation and initial depreciation;

(b) the assumption that all companies calculate depreciation by the reducing-balance method, whereas it is known that in practice some companies use the straight-line method. As a result of the procedure adopted this assumption is not likely to have caused significant errors. It would have been important, however, if the procedure used had involved estimates of the length of life of assets in existence at any point of time;[7]

(c) the simplifying assumption that all assets in existence at 1st July, 1945, were valued in 1944/45 prices. This would introduce a downward bias into the estimates;

(d) the inadequacies of the price index used to measure changing replacement costs of plant and machinery. In particular it is doubtful whether the index makes adequate allowance for technical innovations, in the sense that improvements in the quality of capital equipment may not result in a fall in the index as they should *ceteris paribus*.

To measure the stock appreciation adjustment, total stocks were broken down into industrial groups, and an appropriate price index applied to the value of opening stocks in each group. Ideally, a further classification of stocks into raw materials, work in progress and finished goods should have been made and separate price indexes applied to each component. However, in the absence of information about the composition of stocks, and because satisfactory price indexes do not exist, a compromise procedure suggested by B. D. Haig[8] was used. For each industry a weighted index of material and labour cost was constructed, the weights being the estimated proportions in which material and labour costs entered total stocks in each industry. The indexes used for manufacturing industries were derived mainly from the group indexes entering the Basic Materials and Foodstuffs index on the one hand and the indexes of wage rates for each industrial group on the other. In those industries where the import component of stocks

7. The latter procedure was used, for example, by Philip Redfern in "Net Investment in Fixed Assets in the United Kingdom, 1938-53", *Journal of the Royal Statistical Society*, Series A (General) Vol. 118 Part 2, 1955.

8. *The Measurement and Explanation of Inventory Changes in the Australian Economy, 1928 to 1950*, unpublished thesis (University of Melbourne).

was believed to be higher than provided for in the Basic Materials and Foodstuffs index, the latter was combined with an index of import prices. For agriculture and other primary industries, the Bureau of Agricultural Economics index of prices paid by primary producers was used. For trade and commerce an index was derived by excluding the Housing Group from the C Series retail price index, the resulting index being combined with the Commonwealth Bank Import Price Index in the ratio 3 : 1.

Since the intention was to measure the price appreciation on opening stocks between the beginning and end of the period, the index numbers were required to represent the average prices at which opening and closing stocks were valued. These average prices were obtained by reference to the purchase or turnover period of each industry. Mr. Haig's estimates of the purchase period appropriate to each industry were used, but where the index for the final month was lower than the average one for the purchase period, the former was usually used on the assumption that companies applied the "cost or market" rule. However, companies may not have applied the "cost or market" rule for tax purposes. This was especially likely to have been the case where there was a fall in market prices at the end of the period, with a subsequent recovery early in the next period before the tax return was lodged. In such cases it was assumed that the "cost or market" rule was not applied. In interpreting "cost" price it was always assumed that stocks were valued by reference to the first-in-first-out (FIFO) principle. The balance date of companies was usually assumed to be 30th June, but where it appeared that a large proportion of companies in an industry balanced their accounts before June, 31st May was taken as the average balance date.

It is clear that errors will have resulted from the procedures adopted to overcome the difficulties inherent in the calculation of the stock appreciation adjustment. Possible sources of error are:

(a) lack of information relating to the classification of stocks and the turnover period of different classes of stock. In particular the investigation was hampered by the difficulty of analysing stocks into imported and home-produced components, and into raw materials, work-in-progress and finished goods;

(b) the absence of satisfactory price indexes for some categories of stocks and some industrial groups, and the limitations that result from the use of general index numbers to measure price changes in a heterogeneous collection of stocks;

(c) the implicit assumption that the accounting periods of all companies end on 30th June (or in some cases 31st May) does not accord with reality and may have introduced errors when substantial price changes were taking place;

(d) the assumption that cost may be interpreted by reference to the FIFO principle may have overstated the stock appreciation, to the extent that other methods of stock valuation were employed in practice with a view to reducing the influence of price fluctuations on balance sheet values;

(e) the assumption of price stability within an accounting period means that the stock appreciation has been slightly understated when physical accumulation of stocks was taking place (as it was throughout the period covered).

4. *The Effects of Inflation on Sources and Uses of Australian Company Funds—1945-46 to 1951-52*

The effects of inflation on company profits have been illustrated in Tables I and II; Tables III and IV show how inflation influenced company finances. The sources of the statistics presented in Table III are listed as footnotes to the table. Item 6 is a balancing item, and includes some capital-raising by non-public companies. However, items 4, 5 and 6 together provide a rough measure of changes in the liquid position of companies. The large figures for borrowing[9] and new issues provide a fair indication of the deterioration in company finances that took place as a result of the inflation.

In Table IV the figures presented in Table III are adjusted to eliminate the stock appreciation and provide for the depreciation adjustment. Each item in Table IV is expressed in prices of the current period. Adjusted depreciation allowances (Item 2, Table IV) represent the actual depreciation allowances for tax purposes (Item 2, Table III) adjusted to exclude initial depreciation allowances (Item 2a, Table II) and to include the adjustment for rising replacement costs (Item 2b, Table II):

£ millions

	1945-46	1946-47	1947-48	1948-49	1949-50	1950-51	1951-52
Actual Depreciation Allowances . . .	22	25	29	34	50	78	48
Less: Initial Depreciation Allowances	2	5	7	10	21	36	—
Estimated Ordinary Depreciation (based on original cost)	20	20	22	24	29	42	48
Add: Depreciation Adjustment . . .	—	1	3	4	7	13	20
Adjusted Depreciation Allowances (based on current replacement cost)	20	21	25	28	36	55	68

9. Apart from debentures, etc., borrowing by companies may be analysed into temporary borrowing via tax provisions (item 4); temporary borrowing via dividend provisions (item 5) and other net borrowing (item 6).

TABLE III
Australian Company Finance and Capital Formation

TABLE III

Australian Company Finance and Capital Formation

(Excluding banks and life assurance companies)

(£ millions)

	1945–6	1946–7	1947–8	1948–9	1949–50	1950–1	1951–2
Sources of Finance:							
1. Company Savings	37	49	65	61	78	125*	133*
2. Depreciation Allowances							
(*a*) Buildings	3	3	3	4	4	5	5
(*b*) Plant and Machinery	19	22	26	30	46	73	43
3. New Issues of Shares and Debentures by Public Companies	8	12	20	33	48	79	56
4. Additions to Tax Provisions	—	9	—	9	14	69*	−10*
5. Additions to Dividend Provisions	1	6	3	11	5	5	13
6. Other Net Borrowing by (+) or Net Lending by (−) Companies (Balancing Item)	−20	11	39	7	−7	−14	181
TOTAL FUNDS AVAILABLE	48	112	156	155	188	342	421
Capital Formation:							
7. Gross Investment in Fixed Assets							
(*a*) Buildings	8	11	14	18	23	44	52
(*b*) Plant and Machinery	22	38	50	60	73	128	132
8. Increase in Stock Values	18	63	92	77	92	170	237
TOTAL CAPITAL FORMATION	48	112	156	155	188	342	421

* Subject to revision.

SOURCES OF STATISTICS:

1. Company Savings: See Table I.
2. Depreciation Allowances: (a) Buildings, Estimates derived by raising the amount of depreciation allowed on buildings (Secondary Industries Bulletin) by the ratio of Depreciation of Plant and Machinery in 1951/2 in the Report of the Commissioner of Taxation to Depreciation of Plant and Machinery in 1951/2 in the Secondary Industries Bulletin. (b) Plant and Machinery—Reports of the Commissioner of Taxation.
3. New Issues of Shares and Debentures by Public Companies; "Some Aspects of the New Issue Market and the Financing of Public Companies in Australia from 1946 to 1951" by Dr. A. R. Hall, Table 1 "Public New Issues in Australia" as adjusted in the addenda for the timing of calls on new issues. From these figures new issues by banks and life assurance companies have been deducted. As Hall's figures exclude issues of shares and debentures direct to life assurance companies, these were estimated and added. It should be pointed out that Hall's figures cover only public companies "known to stock exchanges".
4. Additions to Tax Provisions—See Table I.
5. Additions to Dividend Provisions—See Table I.
7. Investment in Fixed Assets (a) Buildings—Investment in New Buildings (Quarterly Business Survey) multiplied by the ratio of purchases of plant and machinery (Reports of the Commissioner of Taxation) to Investment in plant and machinery (Quarterly Business Survey). (b) Plant and Machinery—Purchases of plant and machinery by companies from the Reports of the Commissioner of Taxation. A slight overstatement will be involved here if the published figures include second-hand equipment purchased from other companies.
8. Increase in Stock Values: From Reports of the Commissioner of Taxation.

TABLE IV

Australian Company Finance and Capital Formation (Adjusted)

(Excluding banks and life assurance companies)

(£ millions)

	1945–6	1946–7	1947–8	1948–9	1949–50	1950–1	1951–2
Sources of Finance:							
1. Adjusted Company Savings	36	42	29	24	27	6*	−20*
2. Adjusted Depreciation Allowances	20	21	25	28	36	55	68
3. New Issues by Public Companies	8	12	20	33	48	79	56
4. Additions to Tax and Dividend Provisions	1	15	3	20	19	74*	3*
5. Balancing item (Other Net Borrowing, etc.)	−20	11	39	7	−7	−14	181
TOTAL FUNDS AVAILABLE	45	101	116	112	123	200	288
Capital Formation:							
6. Gross Investment in Fixed Assets	30	49	64	78	96	172	184
7. Investment in Stocks (excluding Stock Appreciation) ..	15	52	52	34	27	28	104
TOTAL CAPITAL FORMATION	45	101	116	112	123	200	288

* Subject to revision.

SOURCES:

1. Item 7, Table II.
2. Item 2, Table III, *minus* Item 2a, Table II, *plus* Item 2b, Table II.
3. Item 3, Table III.
4. Item 4, *plus* Item 5 (Table III).
6. Item 7, Table III.
7. Item 8, Table III, *minus* Item 3, Table II.

It may be seen that so long as initial depreciation allowances were generally available, actual depreciation allowances claimed for tax purposes exceeded the allowances calculated on the basis of current replacement cost.

Investment in stocks (Item 7, Table IV) represents the increase in stock values (Item 8, Table III) adjusted to exclude the stock appreciation adjustment (Item 3, Table II). This item provides a measure of the physical accumulation of stocks at current prices.

5. *Some Implications of the Analysis*

One important fact that emerges from the above analysis concerns the relative magnitude of the adjustments necessary for fixed assets and stocks. For companies in the aggregate the depreciation adjustment during the period covered is unimportant relative to the stock appreciation adjustment (although this may not be true for individual firms or industries). It is interesting to compare this conclusion with the results of a similar analysis carried out by Professor F. W. Paish[10] for United Kingdom companies. Although Professor Paish's figures are based on slightly different assumptions, they indicate that the depreciation adjustment is relatively more important in the United Kingdom than it is in Australia. Over a comparable four-year period the percentage ratio of the depreciation adjustment to stock appreciation was 30 per cent in the United Kingdom compared with 12 per cent in Australia. This is due partly to a higher ratio of fixed assets to stocks in the United Kingdom in the period covered, and partly to differences in relative rates of price increases in fixed assets and stocks in the two countries.

Discussion of the "capital erosion" problem in Australia is usually concerned with the rising replacement cost of fixed assets, but it is clear from the tables that the main cause of under-capitalisation of companies has been the stock appreciation effect. During a period of expansion such as Australia experienced from 1945-46 to 1951-52, the financial problem resulting from the replacement of fixed assets at rising costs was in any case partly offset by the additional depreciation allowances (based on the expanded volume of fixed assets) available to finance replacement while the expansion continued.[11]

Further, it has already been noted that initial depreciation allowances, until they were suspended, were always more than sufficient to offset the depreciation adjustment.

In considering the effect of conventional methods of profit measurement, it is necessary to remember that the tables presented

10. "Company Profits and their Distribution since the War", *District Bank Review*, June 1955.

11. Cf. "Depreciation Replacement and Growth", by E. D. Domar, *Economic Journal*, March 1953.

above have been based on taxation statistics and taxable income differs from the accounting concept of profit in a number of important respects. However, it is clear that during a period of inflation conventional accounting procedures do not provide a measure of business income that may reasonably be regarded as the amount available for distribution. Many companies, aware of this limitation, have taken action to offset the effects of inflation in their own records, but their ability to do this is restricted when taxation is levied on unadjusted profits. In the aggregate of companies, in any case, such action has clearly been inadequate to offset the financial effects of inflation. The adjusted figures for company savings show a downward trend throughout the period, and in fact became negative in 1951-52. As a result companies were forced to rely more and more on short-term borrowing and new issues of shares and debentures in order to finance their investment in fixed assets and stocks.

Finally, the downward trend in adjusted company savings needs to be considered in the light of dividend distributions, taxation policy and the level of profits. During the period, dividends and taxes together increased at a faster rate than current income. Some analysis of the three determinants of company savings—dividends, taxes and profits—is therefore necessary.

There is evidence of some restraint in dividend policy. Dividends seem to have been based on disclosed company profits rather than taxable income, and by means of accelerated depreciation, excessive writing down of stocks, and other transfers to secret reserves, many companies reduced their disclosed profit figures below their taxable income. Some indication of the extent of the writing down of profits may be obtained from the following indexes:

	1945-46	1946-47	1947-48	1948-49	1949-50	1950-51	1951-52
(1) Taxable Income of All Companies (less tax assessed) . . .	100	125	166	186	221	305	311
(2) Published Profits of Public Companies (after tax)	100	116	140	152	174	225	228

SOURCES: (1) Reports of the Commissioner of Taxation.
(2) Derived from a sample of public company reports.

Although dividends rose during the period relative to current income, they declined relative to unadjusted company profits.

The ratio of company taxes to current income increased substantially throughout the period, but it cannot be concluded from this that part of the burden of company taxation should be shifted to other taxpayers. The distribution of taxes between corporate and non-corporate taxpayers is a problem that does not fall within the scope of this paper. There is a strong case, however, for levying company

taxes on current income as defined above, with such alterations in rates as would be necessary to maintain the aggregate revenue from company taxes. This would tend to shift the burden of tax from companies with relatively high trading stocks and depreciable assets to those little affected by increasing replacement costs, e.g. financial companies.

Although the downward trend in adjusted company savings may be partly explained by dividend and taxation distributions, it is also necessary to consider the level of company profits from which the distributions have been made. Given existing dividend and tax policies, profits have been insufficient to sustain the real level of company savings. To some extent this may have resulted from inefficiency, masked as it was by the double illusion resulting from conventional accounting procedures which understated funds employed and overstated income available for distribution. A more important cause of low profits, however, was probably price control or inappropriate pricing policies. The basing of prices on original cost, rather than current replacement cost, seems to have been a corollary of accounting based on historical cost. This has resulted, in effect, in purchasers paying prices that do not reflect the full economic cost.

If prices had been based on current cost, companies could have made the adjustments outlined above without difficulty. Three things appear to be necessary in order to correct the position. *First*, prices should be based on current cost, so that purchasers pay the full economic cost. *Second*, income available for distribution (i.e. current income) should also be calculated by reference to current cost. *Third*, dividends and taxes should be based on current income. The additional revenue received from the higher prices would increase accounting profits. This increase would be roughly equivalent to the adjustments which should be deducted from accounting profits in order to determine current income:

This can be seen from the following example, based on the data assumed in Section 1 above but confining the example to the stock appreciation effect. With selling prices and accounting procedures both based on historical cost, gross profit would be calculated as follows:

Sales		£1150
Less: Cost of Goods Sold		
Opening Stocks ..	£1000	
Purchases	1100	
	2100	
Less: Closing Stocks	1100	
		1000
Gross Profit		£150

If the 3/- pricing margin were added not to the original cost of stocks but to their current cost, and physical sales were constant, the resulting selling price of 25/- per

unit would increase sales revenue by £100, or exactly the amount of the stock depreciation adjustment (which must then be deducted from gross profit to determine current gross income):

Sales		£1250
Less: Cost of Goods Sold		
Opening Stocks ..	£1000	
Purchases	1100	
	2100	
Less: Closing Stocks	1100	
		1000
Gross Profit		250
Less: Stock Appreciation		100
Current Gross Income		£150

We are indebted to Professor T. W. Swan and Dr. A. R. Hall for this point. If the pricing margin takes the form of a percentage added to cost, rather than an absolute amount, the increase in revenue will not exactly equal the amount of the adjustment, but it will approximately do so.

Current income would thus be raised approximately to the previous level of unadjusted profits; and given little or no change in dividends and taxes paid, company savings would be effectively increased.

Space does not permit a full consideration of all the implications of the foregoing analysis. Some important problems arising out of inflation have been glossed over or ignored altogether, and must be left for detailed discussion elsewhere. These include the determination of prices, company distribution policy and other factors influencing savings and investment decisions in the individual firms, together with the consequential effects of conventional accounting procedures on the stability and development of the national economy.

J. McB. GRANT
R. L. MATHEWS

University of Adelaide.

THE OTTAWA AGREEMENT NOW

1. *Introduction*

Several public statements in recent years have reflected the suspicion that the celebrated Ottawa Agreement is perhaps a little out of date and does not fit present trading requirements. We find Professor Copland, for example, saying as early as 1951. "We have clung to Imperial Preference as though it has given us inestimable advantages long after this device has outlived its usefulness".[1]

People are now saying that the Agreement is weighted in favour of the United Kingdom, that it aggravates our cost problems by raising the tariff, that it hinders the development of trade relations with foreign countries, and that the effective Australian preferences in the United Kingdom can be counted on one hand.

In this paper we do not attempt to analyse claims of that character but merely set out a few explanatory notes on the preferential arrangements with the United Kingdom.

The problem of equating advantages in a trade agreement is one for government. It is sufficient here to say that non-economic factors may be involved and that the popular yardsticks adopted for measuring preferences (e.g. comparing the value of trade each way which is covered by preference, or comparing the products of multiplying the quantum of trade each way by the preference margins) are not appropriate, especially for agricultural items. And we must remember that a country may wish to grant special tariff privileges to another for long periods without insisting on measurable compensation. Actually tariff preference was extended to British goods entering Australia as far back as 1908, almost a generation before the United Kingdom was in a position to repay in kind. And Australia was not alone in this. Canada, South Africa and New Zealand also granted preferential tariff treatment to United Kingdom goods, partly for reasons of sentiment, partly to repay the United Kingdom for defence and other favours received, partly with the idea of securing a change of tariff policy in the United Kingdom itself.

However, it is probably true to say that the Ottawa Agreement was intended to provide a fair basis of mutual advantage. When the Ottawa Conference was held in 1932, Australia was able to point to the tariff preferences she had provided for the United Kingdom for many years and, with the other Dominions, demand that the United Kingdom should adjust its tariff to square the account.

Under the Agreement the United Kingdom actually got little by way of additional tariff preference in Australia; as we have said, substantial preferences were already there. But the British Government did carry off a most valuable prize in the shape of the "Ottawa

1. Press statement, 10 December 1951.

formula'' by which minimum preferential tariff margins were granted in Australia according to the amount of duty imposed on British goods. Thus where the duty on British goods ranged from zero to 19 per cent, the minimum preference margin to be added was set at 15 per cent; where the duty ranged from 19 per cent to 29 per cent, the minimum preference margin was set at 17½ per cent. It was agreed that where existing preferences in the Australian tariff exceeded those provided in the formula they were to be maintained.

The formula margins were in fact exceeded in many instances. Moreover the primage duty, which is a revenue duty additional to the tariff, contains a preferential element.

Most of the preferences granted to Australian goods in the United Kingdom applied to foodstuffs. Wool and some other raw materials were not affected. Some of the preferences, e.g. wheat and base metals, were found to be operating in an unsatisfactory manner and were either modified or dropped before the war. Most of the preferences were specific preferences, that is, so much per unit, which made them useful in the period of depressed prices.

Before discussing general points on the exploitation of the preferences it is necessary to remind ourselves that each preference item is a study in itself. Sometimes the preference margin can be added to the ''world'' price. This occurs with many manufactured lines, chemicals and sugar. Sometimes a preference, e.g. on dried fruit, has no apparent effect on the price but is valued because the extra duty makes the preferential market less attractive to the foreigner. Some preference margins in the United Kingdom are of little use to Australia because they are too small; some in Australia are useless to the United Kingdom exporters because the British Preferential Tariff is too high to jump. Some preferences lead to new investment—the most quoted example of this is the big United States investment in motor-car plants in Canada after 1932 to secure a new base for operations. It is the great variety of reactions that makes the task of measuring and equating advantages so extremely difficult.

2. *Imbalance and Its Causes*

Let us consider a hypothetical case where conditions of demand enable a preference to be fully exploited.

For example:

	Commonwealth Supplier	*Foreign Supplier*
	£	£
Landed Price of Item	110	100
Customs Duty	10	30
Extra Profit from Preference	9	—
	£129	£130

If the preference margin is 20 per cent we see that, even though the preferential supplier's basic price is much higher than the foreigner's price (due to higher costs or higher freight charges) he can raise it higher still and continue to undersell the foreigner.

This simple example contains the central elements of the problem of preference, namely the increase in domestic prices and the loss of foreign exchange to the importing country. Competition could reduce or extinguish the extra profit (£9) shown above as arising out of the preference. But if imports from the high-cost preferential supplier are maintained the importing country still loses on the landed price, which is the amount to be remitted abroad.

The protective tariff level in Australia is usually the British Preferential rate. The formula preference margins are added to this to get the foreign rate. In the United Kingdom the preferential margins are usually set by the tariff rates applying to foreign goods because goods from the preferential area enter duty free. (Exceptions are revenue items such as sugar and wine.) Although the preferential margins in Australia thus seem to be mere additions to a moderately high tariff they are much larger than the margins obtained on Australian goods in the United Kingdom, and there is every reason to believe that they are effective. Australian duties on foreign goods restrain foreign competition and, in some cases, place the British manufacturer in a position to charge a higher price to Australian buyers than he charges in the home market or to unsheltered foreign markets. It is quite legitimate to use preference margins in this way.

While the ad valorem preferences in the Australian tariff have retained their original real value, the specific preferences in the United Kingdom tariff have shrunk due to the secular increase in prices. Thus the preference on butter, 15/- per cwt., was worth 15 per cent or more in 1934 but less than 4 per cent in 1955. But some food preferences yielded no obvious benefits even in their heyday. The United Kingdom is a kind of terminal market for several basic foodstuffs, a buyer's market usually, and there is a decided interest in keeping prices on a highly competitive basis. It is only exceptionally that a definite price premium can be obtained from a given preference.

Fluctuations in the intensity of business activity also have a bearing on the usefulness of preferential tariffs. The Ottawa Agreement was made in a time of depression. Preferences, especially quota preferences, are of special value to an agricultural exporting country at such a time primarily because of the relative inelasticity of supply of agricultural commodities. Exporters of secondary products probably benefit most from preferences at a time of strong demand because of the relatively high income-elasticity of demand for manufactures and the great facility of secondary industry to respond to changes in

demand. Perhaps Ottawa would not look quite so ill-balanced if there were another depression!

When a preference enlarges a market for manufactures, there are possibilities of new economies of scale. Agriculture can never escape the problem of increasing costs. The special difficulty for the food exporter, however, is that the foreigner usually finds it impossible to reduce production of foodstuffs and is tempted to subsidise or dump the surplus in the preferential market. During the 'thirties, and even to-day, the entry of subsidised foreign foodstuffs has offset the preferences. In the post-war period the expansion of British agriculture, at increasing cost, has involved further competition from subsidised foodstuffs.

Having made these general points let us look at the major Ottawa preferences themselves. For it is on severely practical grounds that trade agreements are to be examined.

3. *Preferences in the United Kingdom Tariff*

Not all of Australia's exports to the United Kingdom are covered by preferences. In fact more than half the trade enjoys no preference at all. Wool, hides, lead concentrates and several other raw materials were not affected by Ottawa; they continued to enter duty-free from all sources. Mutton and lamb also enjoy no tariff preference. The wheat preference, which provided that Australian wheat should be sold at the world price, was dropped in 1938.

In assessing the value of the preferences in the United Kingdom, we must be cautious in attributing too much to increases in volume in view of the varied responses of agricultural producers to given price situations and the effects of good seasonal conditions. We must also remember that, since dairy produce, meat, dried fruits and some other preferential items are shipped to the United Kingdom on consignment, Australia is willing, perforce, at any time to accept what the market offers and is thus a most formidable competitor. From the viewpoint of the producers concerned a preference is effective if it protects the market price.

Effective Preferences

Sugar.—This is regarded as a most important preference. It was established well before Ottawa. The preference margin is added to the world price to get the price to be charged to the United Kingdom importers. The British Commonwealth Sugar Agreement, which runs till 1963, sets a limit to the quantity of sugar that may be exported by Australia. The export quota is 600,000 tons, half of which is sold at a negotiated contract price and half at the world price plus preference.

The *Canned Beef* preference of 20 per cent is also regarded as most valuable. At Ottawa a preference of 10 per cent was granted. This was of little use but, when the margin was increased to 20 per cent in 1936, Australian exporters benefited immediately.

Fruits and Wine.—Exporters of processed and fresh fruits undoubtedly consider the Ottawa preferences as valuable aids to business. In the case of canned fruits, the preference earned Australian exporters a price premium.

The above items account for about a fifth of Australia's exports to the United Kingdom. The preferences seem to work in these cases. It is when we turn to the other preferences that we strike difficulties.

Other Preferences

Meat.—The Ottawa Agreement made no provision for a tariff on imports of meat from foreign countries, but established quotas which had the effect of reducing imports from Argentina and allowing trade with Australia and other Commonwealth countries to expand. These quota preferences were regarded as the outstanding achievement of Ottawa so far as Australia was concerned and they were undoubtedly valuable during the 30's. However, the quotas were suspended at the outbreak of war and have not been re-imposed because of the supply situation. The only preference applying to meat at the present time is the duty of two-thirds pence per lb. on frozen beef and ¾d. per lb. on chilled beef which were introduced in 1936. Mutton and lamb enter duty-free from all sources. Australian exports of meat to the United Kingdom are protected by the 15-year Meat Agreement which runs until 1967. This agreement gives Australia unrestricted access to the United Kingdom market and provides for minimum prices on meat sold to the United Kingdom. The Ottawa quota preferences could conceivably be employed to support the 15-year Meat Agreement by reducing the pressure of foreign meat. However, the quota preferences at the moment are inoperative.

Butter.—The preference on butter was regarded as another valuable Ottawa trophy. Foreign butter entering the United Kingdom pays a duty of 15/- per cwt. which is equivalent to around 4 per cent at the present time. The duty on foreign butter is disliked naturally enough by the Danish and other foreign interests, but has never had any noticeable effect on the prices received for Australian butter or on foreign production and trade. But the industry may have found it a comfort in the 30's when prices for butter in London fell to well below £100 a ton.

Cheese.—Cheese enjoys a preferential rate of 15 per cent. However, it has not made much difference to the price of Australian cheese because most of the imports of cheddar come from Commonwealth

sources, all of which enjoy the same preference. Continental cheeses do not compete freely with Australian.

Eggs.—The preference on eggs is less than 2d. per dozen and seems to have been designed more as a protection to British producers than as a privilege to Australia. The 10 per cent preference applicable to egg pulp is likely to be more useful to Australia than the preference on shell eggs.

Lead and Zinc.—The original Ottawa preferences on lead and zinc actually caused losses to the Commonwealth suppliers, because they involved sales at world prices which in turn were forced down by the effects of the United Kingdom tariff. The duties were revised in 1935 but, in present circumstances, the preference of 7/6 per ton on lead and 30/- per ton on zinc are unimpressive.

Honey.—The preference on honey is 3/6 per cwt., which is less than 4 per cent ad valorem at the present time.

10 per cent Items.—Australian flour, barley, tallow, sausage casings, leather and miscellaneous foodstuffs enjoy a preference of 10 per cent. In these products other Commonwealth countries are also large suppliers, consequently the preferences have had little effect on trade or prices. In any case, a preference of 10 per cent is often too small to have much effect in discouraging the purchase of foreign goods. We have already mentioned how a 10 per cent preference on canned beef was ineffective, but a preference of 20 per cent was highly effective.

In respect of these items the present importance of Ottawa rests upon its assurance of duty-free entry into the United Kingdom.

This second group of products accounted for about one-quarter of Australia's exports to the United Kingdom in 1953-54. Summing up, therefore, we may say that one-fifth of our exports enjoy effective preferences, a further quarter are subject to nominal preferences, while on the balance of our trade with the United Kingdom there is no tariff preference whatever.

4. *Preferences in the Australian Tariff*

The proportion of British exports to Australia entitled to preference is much higher. It may be thought that in view of the nature of the preference formula all British goods entering Australia would receive tariff preference. However, there are some items which enter duty-free from all sources, others which enjoy no tariff preferences, while duties are often suspended under the provisions of the Customs Act. It would not be unreasonable to state that at least three-quarters of the British goods sold in Australia enjoy the shelter of the preferential tariff.

The minimum margin of preference is now 12½ per cent, having been adjusted in 1947 when Australia changed the basis of valuing goods for duty purposes. On many items this minimum is exceeded and, as we have already mentioned, the primage duty also contains a preferential element. There is virtually no published data available[2] on the cost of the preference margins as additional import costs. Actually the costs to Australian consumers are increased by rather more than the benefits to the British exporters. The preference margins in Australia are added to the protective tariff and tend to encourage increases in the price of locally produced goods and foreign goods as well as British goods. Import licensing gives an added scarcity value to imported goods sold in Australia. Percentage retail mark-ups and sales tax build on the initial high prices. It is here that the shoe pinches. A high single-column tariff pushes up domestic prices in the importing country, but it also yields revenue, checks the flow of imports, and in the short term even improves the terms of trade by forcing down the landed price of imported goods. But a preferential tariff, while it raises prices in the domestic market, also enables the landed price of goods from the preferential supplier to be kept up. There is a net loss of foreign exchange to a country if the preferential benefits are not in rough balance.

By means of tariff negotiations conducted under the auspices of the General Agreement on Tariffs and Trade, reductions of preference margins can be "paid for" with tariff concessions in the foreign countries which might expect to benefit. However, reductions of preference margins in the Australian tariff may be difficult because of the fact that the preferences are now regarded as permanent features of the trading landscape. On the other hand, proposals for the enlargement of preference margins in the United Kingdom could involve a conflict with G.A.T.T. principles. The G.A.T.T. is opposed to new or increased preferences although it does not hinder special commodity arrangements such as the 15-year Meat Agreement or the British Commonwealth Sugar Agreement.

W. R. CARNEY

Canberra.

2. A table published by the Commonwealth Statistician before the war showed the difference between the amount of duty actually charged on United Kingdom goods entering Australia and the amount payable had the General Tariff rates been applied. Publication of this table ceased in 1939/40. Over the 12-year period 1928/29 to 1939/40 the average rebate, which was actually fairly steady from year to year, was 15·8%. On the 1953/54 imports of £331m. this would yield a rebate of over £50 m. Even half this figure would be impressive.

A PILOT SURVEY OF PERSONAL SAVINGS*

1. *Introduction*

Little is known about personal savings in Australia. Savings by persons is only one of the sources from which gross capital formation is financed, the bulk of gross saving being performed by business and government. Nevertheless the level of personal saving is important as it can be positive or negative and can have big repercussions on the rest of the economy.

As an addition to the global approach of the White Paper on National Income and Expenditure, it would be useful to have an analysis of the personal savings aggregate into its components, i.e. a classification by forms of saving and types of savers. The explanation and prediction of the effects of policies and events on the aggregate depend on knowledge of these components.

Some information on the analysis of total personal saving into the different forms of saving is available from banking statistics. However this information contains many difficulties, the main one being the problem of separating individual from business ownership of assets.

One way of obtaining the information on forms of saving would be to go to a sample of persons and ask for it. Such a sample survey could provide reasonable estimates of the information sought and would also have the advantage of obtaining information from the types of people who do the saving. Thus the factors determining personal saving could be elucidated.

With these considerations in mind, the Department of Economic Research at the University of Melbourne undertook a pilot survey of personal savings in part of the Melbourne area. In this paper the purpose, methods and principal results of the survey are outlined.

2. *Purpose*

The purposes of the pilot survey were to ascertain whether the technique of direct questioning of individuals about their finances could be used successfully in Australia; to investigate the practical problems of conducting such a survey for Australia; and to obtain such information about the characteristics of the population as would

* This survey was financed out of a general grant by the Commonwealth Bank to the Department of Economics Research at the University of Melbourne. The Department of Economic Research is solely responsible for the conception and execution of the survey. The authors wish particularly to thank Professors Cochrane, Downing, Polglaze and Prest for their help and encouragement; Mr. S. R. Carver and the Bureau of Census and Statistics for suggestions and help; Dr. K. Rivett for help with definitions; the interviewers Misses J. M. Bartrop, E. Kitto and Mr. A. D. Barton; and the research assistants Miss B. Gilder and Mr. R. A. Allsop.

be of interest for their own sake and of use in planning a larger survey, in particular, the likely cost of an annual survey throughout Australia.

The method of approach used has already been tested overseas† and found to be successful, but, until this survey, had not been tried in Australia. The method is not to ask directly how much the person interviewed saved in the period but to obtain this information by the indirect means of constructing, in effect, a personal balance sheet for each person (and his dependants) for two points of time, namely the time of the interview and one year previously. This is a practicable method of obtaining a uniform and suitable definition of savings. Its success depends on the ability and willingness of the people interviewed to report, with a reasonable degree of accuracy, their financial situation at the time of the interview and changes since a year earlier.

3. *Method*

Area

The area chosen for the pilot survey was for reasons of convenience within the Melbourne metropolitan area. Three separate areas were chosen within Melbourne—Prahran, Box Hill and Bentleigh-Moorabbin. These areas contain a wide variety of population, but, while being typical areas in Melbourne, they cannot be regarded as representative of Melbourne as a whole, nor, of course of Victoria or Australia. The most obviously atypical feature is that being within an urban area they contain practically no farmers or country people. However, as a testing ground for the survey technique, the areas were probably as good as any others that could have been chosen. The economic information obtained cannot be assumed to be valid for Australia as a whole.

The Population and Its Units

The population to be covered by a survey of this type should include everyone who has or could have an income or any saving, i.e. the whole population. However, because the sample was selected from lists of dwellings and because special dwellings such as hotels, schools or other institutions present a difficult interviewing problem, these special dwellings were excluded. The population was thus limited to persons living in private dwellings.

This population can be grouped into "Income Units". All children under 18 and any other family members (related by blood, marriage or adoption) who contribute more than half of their income to the

†For articles on the methods used, reference should be made to *The Federal Reserve Bulletin*, issues of September, 1945, "Survey of liquid asset holdings"; and July, 1950, "Methods of the survey of consumed finances"; and to the *Oxford Institute of Statistics Bulletin* articles by H. F. Lydall, "A pilot survey of incomes and savings", September, 1951, and "The method of the savings survey", July and August, 1954.

general family living expenses were included in the one income unit with the husband and wife. Thus in the majority of cases an income unit includes all the persons living in a particular dwelling but, on occasion, there occur additional income units (secondary units) consisting of a lodger, or a second family, or a family-member who keeps more than half of his income to himself.

Sampling Method

In any scientific enquiry based on a sample it is advisable to use a random sample of the most efficient kind. For sampling purposes there is needed either a complete list of sample elements or a complete list at each stage of the sample selection. There exists no ready-made framework list of income units. However, because of its operational simplicity it was possible to use a multi-stage survey where dwellings were the final stage of selection, all income units in any selected dwelling being enumerated. The multi-stage method enables a satisfactory sample to be selected without having the trouble and expense of listing every dwelling in the universe. For this survey only 8 per cent of all dwellings in the three areas were actually listed. Finally selected dwellings were grouped closer to one another than under a single stage selection, thus saving travelling time.

In a survey of this type the principal variables—income, asset holding and saving—can be expected to show high variability. To help minimise consequently high sampling errors, a form of stratification was introduced using variable sampling fractions. A suitable technique available seemed to be the use of a two-phase selection permitting stratification in the second phase on the basis of criteria, noted for all first-phase sample dwellings, such as general appearance, size, degree of dilapidation, likelihood of ownership of car, connection to telephone, etc. On this basis three strata, called High Income, Medium Income and Low Income were used. Thus we hoped that there would be some relation between the criteria used for stratifying the dwellings and the income, asset-holdings and saving of the income units. An essentially similar stratification was used in the United Kingdom by the Oxford Institute of Statistics where the rateable value of property was the stratifying factor.

In outline the sampling operation comprised four stages:

(i) After selecting three suburban areas within Melbourne, these areas were divided into districts of approximately 250 dwellings. A number of these districts were selected within each area with a probability of selection proportional to the size of the district, size being measured by the number of private dwellings in each district, and one district being selected for every 1,200 dwellings within the area.

(ii) Within each selected district three blocks (areas defined by streets) were selected again with probability proportional to size, i.e. number of dwellings in the block.

(iii) From each selected block a systematic random sample of (an expected four) dwellings was selected as the first-phase sample, the sampling fraction within each selected block being such as to yield a self-weighting first-phase sample which was a one per cent sample of the dwellings in each area.

(iv) These first-phase dwellings were inspected and on this basis stratified into high, medium and low strata and sub-sampled by including all dwellings classed as high and selecting at random half of the remaining medium and low dwellings from two of the three blocks in each sample district. This gave us our second-phase sample having approximately four dwellings per sample district in two blocks plus all high income dwellings included in the first-phase sample.

As there were approximately 22,000 dwellings within the three areas the plan was expected to provide a first-phase sample of 220 dwellings and a second-phase sample of about 70 dwellings plus any high income dwellings—in total less than 100. Thus the dwellings selected for interview were selected at random, with known probabilities of selection other than zero and in general arranged in groups of two "clusters" of two dwellings each.

Types of Information Collected and Definitions of Concepts Employed

The information collected has been listed below under convenient headings, although it was not asked for in this order. Considerable time was spent in designing a questionnaire which would enable the information to be obtained in an easy way with the maximum of co-operation from respondents.

(a) *Total Income of the Unit for the Past 12 Months*

Three forms of income were distinguished, "net income", "net disposable income" and "take home pay". Net income is the total of the incomes of each member of the unit in the last twelve months after making allowance for costs and expenses in the case of self employed persons but before any deductions on account of taxation or insurance contributions. Contributions by employers to superannuation schemes are considered as part of net income of employees since they form a substantial part of the net advantages of a job and are an important source of contractual saving. Net disposable income is net income minus taxation paid. Take home pay excludes both superannuation and taxation payments.

Details were recorded of the amount of income received by each member of the income unit from each of the following sources:

(i) income from profits of private business, profession or farm;
(ii) employment income, including wages and salaries, overtime and bonus payments, commissions, spare time employment, and roomers and boarders;
(iii) property income including dividends, interest, royalties and rent;
(iv) transfer income including all pensions, maternity, sickness, hospital, unemployment, compensation and child endowment benefits.

Other windfalls and capital receipts such as legacies, lottery wins and matured insurance policies were recorded but not included as income, as these receipts do not occur regularly and are therefore unlikely to produce regular patterns of behaviour.

The difficulties of measuring income, especially that from farming and private business were recognized, but no new solution was offered. Generally respondents were asked for the figure included in their taxation returns. This is probably the significant one for an income unit.

(b) *Contractual Savings*

Various questions were asked to obtain details of payments during the last twelve months in connection with previously incurred obligations and agreements. Once the contract has been made these payments in general, are automatic. The items included under this heading were:

Premiums paid on account of life and endowment insurance (assurance);
Superannuation and pension fund scheme payments by employer and employee;
Payments in connection with financing a private home, namely, building society payments, war service homes payments, credit foncier bank payments, decrease or repayment of mortgage principal and any other reduction in housing loan principal.

(c) *Liquid Asset Holdings*

Respondents were asked whether the members of the unit held certain types of liquid asset at the time of the interview and twelve months previously and, if so, how much. Levels and changes were thus established for the following types of liquid assets:

Savings bank deposits;
Trading bank deposits (personal);
Pocket cash;
Other cash unbanked.

(d) *Capital Transactions*

While a clear distinction between capital and current consumption expenditures is somewhat arbitrary, respondents were asked a large variety of questions about possible capital transactions. The principal constituents were the purchase and sale of property, shares, bonds and automobiles, changes in indebtedness (including time payment) and private business investment or withdrawals. Information on all these sources (or dispositions) of funds were necessary for computing a figure of net savings.

The Computation of Net Savings

From the information collected the net personal saving of each income unit for the previous 12 months was deduced in the following manner. Three personal saving accounts for each income unit were assembled, each account being credited with some items and debited with others. These items are, in effect, the definition of personal saving adopted and are shown below.

Contractual Saving

Credits

Life insurance premiums paid
Superannuation payments by unit and employer
Building society, credit foncier bank and war service home payments
Decrease in or repayment of mortgage principal.

Changes in Liquid Asset Holdings

Credits	*Debits*
Increases in—	Decreases in—
Savings bank deposits	Savings banks deposits
Trading bank deposits (personal)	Trading bank deposits (personal)
Pocket cash	Pocket cash
Other cash unbanked	Other cash unbanked

Miscellaneous Savings

Credits	*Debits*
Overdraft decrease (personal)	Overdraft increase (personal)
Loans (for other than home purchase) decreased, paid off	Total increase in loans (for other than home purchase)
Net increase in government securities	Net decrease in government securities
Net increase in overseas government securities	Net decrease in overseas government securities
Increase in private securities	Decrease in private securities
Gifts, loans made	
Capital invested in private business, profession, farm	Capital (i.e. money other than income withdrawals) withdrawn from private business, profession, farm
Purchase price of property (including houses and net of legal fees and stamp duty)	Net receipts from property sale
Purchase price of total additions to home	Increase in mortgage principal
Hire purchase payments for additions	Purchase price of hire purchase financed additions to home
Cash and hire purchase payments for cars	Net receipts from car sale

Hire purchase payments for durable goods	Purchase price of hire purchase financed durables
	Total receipts from sale of durables
Other hire purchase paid off	Other hire purchase entered into
Decrease in indebtedness on retail and service account	Increase in indebtedness on retail and service account
	Windfalls and capital receipts

The sum of the balances on these three accounts was taken as the income unit's net personal saving out of income in the previous twelve months.

Fieldwork

The selection of first-phase dwellings and the inspection of these were made during the last week of August, 1954, opportunity being taken to check the listing of dwellings within blocks and to give new dwellings a chance of selection, the lists having been made three months previously. Letters from the Research Professor were sent to the householder at each dwelling selected in the second-phase, acquainting him with the survey and informing the householder that an interviewer from the University would be calling in the near future.

The interviewing stage of the survey was planned to take place during September, 1954. The bulk of the interviews were completed by 30th September and the remainder by 6th October. This time of the year was considered to be fairly suitable as people would have completed their taxation returns for the previous financial year and some would have received their assessments. Hence the information collected in this pilot survey refers almost exactly to the financial year 1953-54, although there must be some doubt about the exact period to which replies to questions relating to "the past year" and "twelve months ago" refer.

Four interviewers were recruited, two men and two women. All were graduates of the University. Clusters of dwellings were allotted to each interviewer but the work load was not evenly distributed as the interviewers had different amounts of time available. Only one had previous experience of survey work. The training given to one interviewer was not quite adequate, but close check was kept on the quality of the work and on the travelling and interviewing times. Schedules were required to be sent in as completed and were edited as received. Any omissions, mistakes, or doubtful points were cleared up with the interviewer immediately. In a few cases the interviewer returned to a dwelling to make good some omissions of secondary income units not interviewed in the initial visit.

Interviews were to be made with the heads of all income units in the dwelling. In most cases it was found best to interview husband and wife together. If no one could be contacted at the address at least four calls were made at different times during the month before giving up

the dwelling as non-response. In the introductory words the interviewers enquired whether the letter had been received, explained further the purpose of the survey and emphasised particularly that they did not know, nor ask for, the names of the persons interviewed. During the interview respondents were encouraged to consult written records wherever possible.

4. *Principal Results*

The data collected on income and savings has little merit in itself because of the limited amount of time and resources spent on the survey and the small size of the sample. Therefore attention will be concentrated on the difficulties and costs of collecting the information. For this purpose the survey has been invaluable.

Accuracy

The degree of reliance which can be placed on the results of this type of survey are dealt with under three headings—rate of response, sampling error and accuracy of respondents' answers.

Rate of Response.—Response or non-response was generally indicated in the opening remarks of contact with the respondent. People were prepared to be completely co-operative or not at all. In a few cases seeming non-respondents were persuaded to answer when erroneous impressions of the survey's purposes were corrected.

Overall 74 per cent of dwellings selected responded satisfactorily. Table I shows the reasons for non-response.

TABLE I

Reasons for Non-Response

(Number of Dwellings in sample)	
Not at home after repeated calls[1]	8
Refused to answer, point blank	11
Refused to answer, special reasons[2]	5
Total non-response	24
Total responding dwellings[3]	68

1. Includes one dwelling unoccupied as still under construction.
2. Includes one refusal because of death in family, one because of an impending court case, one sub-normal respondent and two refusals after starting the interview.
3. Includes two dwellings each with one income unit responding and another unit refusing to answer.

In Box Hill and Bentleigh-Moorabbin, over 80 per cent of the dwellings responded, while in Prahran no response was obtained from 13 out of 27 sample dwellings. Seven of these non-responding dwellings were where no one was at home after repeated calls. If these are excluded, 70 per cent of the dwellings contacted in this area responded.

As a guide to the type of people who do not respond, interviewers recorded characteristics observed of persons seen but who refused to answer. These observations suggest that refusal is more probable in the older age groups. Other persons who are likely to refuse are:

(a) persons of below-average intelligence, who are suspicious of things they do not understand;

(b) persons who tend to be conservative in belief and regard surveys as retrograde steps "prying into a person's private business";

(c) persons who have something to hide, either because they are evading taxation or are otherwise engaged in activities that they regard as illegal or not for general information.

With a detailed survey such as this, non-response will always prove a major difficulty. However, the impression gained from this survey is that the response rate is fairly high and that, apart from some under-representation of older householders, non-respondents would be spread fairly evenly among the various groups within the population.

Sampling Error.—The sampling errors in the pilot survey were rather large, partly because of the extreme variability of the material being studied and partly because of the limited size of the sample. For example the mean savings bank deposits per unit, namely £232, when considered as an estimate for all units in the 22,000 dwellings in the three sample areas, has a standard error of £36. That is to say, if we can assume the sample mean is normally distributed, the chances are 19 to 1 that the true mean for the units in these areas lies somewhere between £160 and £304.

For a larger scale survey the size of the sampling error would be considerably reduced. However, because of differences in variability among the several variables measured in such a survey, some compromise on sample size and sampling error would have to be chosen. All the answers from a survey cannot be produced to the same degree of precision.

Accuracy of Respondents' Answers.—How reliable and accurate were the answers obtained in the survey? One of the important facts that emerged was the readiness with which people produced personal records, such as bank books, hire purchase dockets, tax returns, group certificates, and salary envelopes. Thus most answers were more than "informed guesses". People attempted honest and conscientious answers when records either were not accessible or did not exist.

Subsequent computations and checks for internal consistency in the answers showed that the majority were correct. A few cases arose in which it appeared that the answers to the income questions were

incorrect (possibly on account of tax evasion) and adjustments to the returns were made to ensure internal consistency.

Income Unit Composition

We will now consider some of the information provided by the survey about the people residing in these areas of Melbourne. First there is a quantity of general information such as the age, sex and occupation of the heads of income units, the number of income units per dwelling and so on. Only a few details of this information are given here.

A question of some importance in the planning stage is just how many income units will be encountered per dwelling. The weighted average number of units per dwelling was 1·42. Table II shows the distribution of income units according to the number of units per dwelling.

TABLE II

Distribution of Income Units According to Number of Units per Dwelling

(Percentages of all units in contacted dwellings)

	Weighted Total
Units living one to a dwelling	71
Units living two to a dwelling	21
Units living three or more to a dwelling	8
All Units	100

It will be remembered that multi-unit dwellings such as hotels, hospitals, schools, prisons and barracks were excluded from the scope of the survey.

An analysis of the average number of persons per dwelling and per income unit is shown in Table III. The weighted average of 3·84 persons per dwelling is reasonably close to the Australian 1954 Census figure of 3·69 persons per private house (one schedule).

TABLE III

Average Number of Persons per Dwelling and per Income Unit

	Stratum			*Weighted Total*
Average number of persons	*High*	*Medium*	*Low*	
Per dwelling	2·88	3·88	4·17	3·84
Per income unit	1·96	2·70	3·13	2·71

Further details of the composition of the income units are shown in Table IV.

Liquid Assets Holdings and Contractual Savings

The following tables are illustrative of the type of data available from a survey such as this. The principal feature is the wealth of

TABLE IV

Income Unit Composition

(Percentage distribution of number of income units)

Sex of Head of Unit—Male	80
Female	20
Age of Head of Unit—18 and under 25 years	15
25 and under 35 years	26
35 and under 45 years	21
45 and under 55 years	23
55 and under 65 years	9
65 years and over	6
Marital Status of Head of Unit—Single	30
Married	64
Widowed	5
Divorced	less than 1
Number of Earners per Unit—One	86
Two	14
Three	less than 1
Number of Dependant Children per Unit—Nil	52
One	16
Two	18
Three	10
Four	4
Number of Persons per Unit—One	33
Two	16
Three	17
Four	20
Five	10
Six or more	4

cross-classifications that are available. From the computation aspect this is quite a problem and considerable attention was given to methods of obtaining all the double-entry tables required without having to re-sort the data for individual units more times than necessary.

Other classifications of the data, such as by occupation or industry of the head and by income size of the unit, were calculated but are not presented here. Some 1800 cross tabulations of this nature are possible and of these some 200 or 300 are worth while. In general these tables show the mean amount of each particular variable for each type of unit as in Table V, or percentages of the number of each type of unit falling within various categories such as in Table VI.

Costs

The cost of an annual survey of this kind throughout Australia depends on the size and location of the sample, the method of making interviews and the amount of information sought, in other words on the design of the survey.

The major elements of cost were determined by the pilot survey. The cost of selecting a large scale sample would depend on whether

TABLE V

Savings Bank Deposits and Contractual Savings

(Average amount per income unit)

Type of Income Unit	*Present Amount of Savings Bank Deposits*	*Contractual Savings During Year*
	£	£
All Units	232	147
Sex of Head—		
Male	254	183
Female	145	7
Age of Head—		
18 years and under 25 years	174	25
25 years and under 35 years	142	168
35 years and under 45 years	284	164
45 years and under 55 years	205	178
55 years and under 65 years	393	110
65 years and over	447	Under 1
Marital Status of Head—		
Single	211	58
Married	240	186
Number of Dependant Children in the Unit—		
Nil	256	114
One	226	228
Two	290	174
Three	92	142
Four	22	147

TABLE VI

Contractual Saving of Income Units

(Percentages of income units of each type)

Type of Income Unit	Percentage of Units who:—				
	Contractually Saved	Paid Life Insurance Premiums	Contributed to Super-annuation	Paid Building Society Payments	Repaid Mortgage Principal
All Units	71	59	32	27	13
Sex of Head					
Male	79	66	35	34	17
Female	41	35	20	—	—
Age of Head					
18 and under 25	58	58	19	17	3
25 and under 35	90	81	19	43	19
35 and under 45	80	56	58	38	18
45 and under 55	17	59	36	18	12
55 and under 65	62	29	48	14	14
65 and over	under 1	under 1	—	—	—
Marital Status of Head					
Single	45	41	16	8	5
Married	83	67	39	35	17
Number of Dependant Children					
Nil	55	39	19	12	10
One	74	67	33	49	15
Two	93	80	50	43	23
Three	100	100	40	36	12
Four	100	100	67	33	—

arrangements could be made to use an already established sampling framework or whether the survey would need to construct its own framework. With experienced interviewers and reasonable co-operation from the respondent, twenty-five to thirty-five minutes would be ample time to obtain satisfactory answers for all but the most complicated and involved family balance sheets. In addition to the actual interview time, considerable time would be spent in travelling to the dwellings and in calling back at dwellings where interviews could not be undertaken on the first contact. It is estimated that in four weeks, working on week-nights only, an interviewer could obtain successful interviews from between thirty-five to forty income units, i.e. slightly less than two per night.

In addition up to forty minutes per primary unit and fifteen minutes per secondary unit would be spent in editing completed schedules and transferring the information to a more easily managed single sheet. The cost of obtaining means, percentages, and totals from the schedules depends on the volume of the results wanted and the methods employed in tabulation. Using "peg board" sheets and desk comptometer machines (as was done in the pilot survey) the time involved in classifying some sixty variables with some twenty types of income unit would be about one hundred machinist-weeks for each thousand schedules in the survey. Alternative methods may be able to reduce the labour involved in computing the results.

5. *Conclusion*

The main result of the pilot survey is that worthwhile information about the levels and forms of personal savings could be collected by an Australia-wide survey. If carried out annually the results of the survey would fill one of the most important gaps in our regular knowledge of the Australian economy.

One major problem, that of surveying in rural areas, still exists. The expense of interviewing in Australian rural areas would be considerably greater than in urban areas. As farmers' savings are likely to be substantial and held in different forms than those of city dwellers, some attempt to solve this problem needs to be made. However, the results of an annual savings survey in Australia (even confined to urban areas) would be of considerable interest and use to our economists, statisticians and policy makers.

G. C. HARCOURT
DUNCAN IRONMONGER

Melbourne.
Canberra.

CURRENT AGRICULTURAL DEVELOPMENT AND ITS IMPLICATIONS AS REGARDS THE UTILISATION OF RESOURCES

Future economic historians will probably attach considerable significance to the Commonwealth Government's overt recognition, in 1951, that the rate of growth of Australian rural industries could no longer be taken for granted so far as Australian economic development was concerned. Whatever may be the interpretation of the immediate events which prompted this change in national outlook, it did represent a pronounced shift from the long-standing policy of giving priority to fostering the expansion of manufacturing industries. As a consequence of the new broader approach to industrial development, questions of relative growth rates and concepts of balanced growth have come to the forefront of economic discussions.

The present paper deals merely with one facet of this general question. It consists essentially of two parts: a highly condensed review of movements in rural output and factor inputs during the period since the war; and an assessment of the implications of the current pattern of growth of Australian agriculture, with particular reference to the labour and capital markets.

1. *The Comparative Growth of Primary and Secondary Industries*

Judged in terms of physical output, the rate of growth of manufacturing has clearly far outpaced the growth of agriculture in the post-war period. Beginning in 1945-46 with a level of output probably of the order of 20 per cent above the immediate prewar period, manufacturing output has increased relatively steadily at an (average) compound rate of increase of 6·7 per cent per annum, 1952-53 being the only year when there was any regression (see Table I).

Agriculture emerged from World War II with an output about 10 per cent below the immediate prewar level. This low figure was attributable in part to the set-back to livestock numbers occasioned by the 1944-45 drought. Between 1947-48 and 1950-51, production was fairly stable at a level 10 per cent above the prewar average. After a somewhat anomalous drop in the 1951-52 season, agricultural production in the past three years has become stabilised at a level between 20 and 25 per cent higher than that attained before the war. This represents a compound growth rate of 3·6 per cent per annum between 1945-46 and 1953-54, but of course the pattern of growth has been much more erratic than for manufacturing. If the war period is taken into account, the growth rate is only 1·3 per cent per annum.

TABLE I

Relative Growth of Rural and Manufacturing Industries—Australia

Year	Index of Rural Output (1937–39 = 100)	Index of Factory Output (1948–49 = 100)	Net Value of Rural Production		Net Value of Factory Production	
			Actual	Percentage of Total	Actual	Percentage of Total
			£m.	%	£m.	%
3 years ending June 1939	100	n.a.	168	42·2	193	48·4
1945–46	92	(78)	261	39·3	352	53·1
1946–47	91	(89)	299	38·3	411	53·4
1947–48	109	(94)	498	47·0	489	46·2
1948–49	109	100	494	43·2	569	49·7
1949–50	115	104	660	46·9	662	47·0
1950–51	109	116	1028	51·8	844	42·6
1951–52	103	119	783	40·1	1025	52·4
1952–53	121	112	942	43·0	1083	49·5
1953–54	122	131	933	40·2	1231	53·0
1954–55	122*	139	n.a.	n.a.	n.a.	n.a.

* Subject to revision.
n.a. = not available.

SOURCE: Commonwealth Bureau of Census and Statistics, except the Index of Factory Output which is that prepared by the A.N.Z. Bank. Figures in brackets were derived from S. P. Stevens, "An Index of Australian Manufacturing Production", *Economic Record*, Vol. XXX, No. 58 (May 1954), p. 92.

The relatively faster growth of manufacturing has been masked to some extent by the improved terms of trade which agriculture has experienced in the post-war period.[1] The proportions of the total net value of output of all recorded industries contributed by rural and manufacturing industries respectively have been relatively stable.

In both primary and secondary industries, specific classes of commodities have naturally followed rather different patterns of growth. Speaking in broad terms, so far as the agricultural sector is concerned, dairy production to-day is little different from what it was fifteen years ago, though ground lost during the war and early post-war years has now been recovered. The acreage under wheat has fallen substantially, though yields of cereal crops have recently been running about 50 per cent above the prewar average. Among the other crops, sugar acreage and output have expanded markedly. However, the really significant production increases have occurred in the pastoral industries where wool production and cattle turn-off are at unprecedented levels.

1. The continued rapid growth of the manufacturing industries since the war, despite the trend in the terms of trade, is in contrast to earlier experience. C.f. L. G. Melville, "The Effects of the Tariff" (Paper presented to Section G, A.N.Z.A.A.S., 1946).

A most noteworthy fact about recent advances in agricultural productivity is that they have occurred in industries characterised by extensive rather than intensive production methods. Industries of the former type are, of course, those in which this country has the greatest comparative advantage, but at the same time, it is these industries which are most vulnerable to adverse seasons. While there is little doubt that the production potential of these industries has expanded, the fact that recent increases have been achieved during an unusually long succession of good seasons means that recent production figures have to be discounted to some extent.

(a) *The Land Base*

The 20 per cent increase in agricultural output has been achieved with comparatively little change in the land base. The number of rural holdings as reported by the Statistician has remained static at about 245,000 for over ten years, the tendency to decline in New South Wales and Victoria being compensated by slight increases in other states. Similarly the total area in rural holdings in New South Wales and Victoria is significantly below the prewar area but increases in other states, especially Queensland, have meant an overall increase of 5 per cent in the land in farms during the past fifteen years. At the same time, the area under crops is well below prewar experience, although the trend in the past three years has been upward. The drop in crop acreage has been more than offset by the sharp increase in the area sown to improved pastures. The statistical picture is incomplete, but it would appear that to-day over 25 million acres are under improved pastures as against about 10 million acres in 1939. Two and a half million acres of pastures alone were sown in the year ended March 1954. In some states, such as New South Wales, the sowing of improved pastures seems to be gathering momentum.

(b) *Changes in the Labour Force*

In sharp contrast to the 50 per cent increase in the number of male factory employees and the 20 per cent increase in female factory employees since 1946, the post-war increase in agricultural output has been accomplished by an almost constant permanent labour force (Table II). The male component of the permanent rural work force, which in Australian agriculture comprises almost 90 per cent of the whole, has been relatively steady in the post-war period at about 350 thousand. This compares with about 390 thousand in the years immediately before the war. The permanent hired labour force, which seems to have stabilised at a little over 90 thousand, is probably about 15 per cent below prewar size. The sharp drop in the rural work force, of course, occurred during the war. The people who left in many cases

TABLE II

Work Force (Thousands)

Year	Factory Employment			Permanent Agricultural Employment			Distribution of Permanent Male Rural Work Force		
	Males	Females	Total	Males	Females	Total	Operators	Unpaid Relatives	Hired
1938–39	413	153	565	392	32	424	n.a.	n.a.	n.a.
1945–46	549	196	745	350	55	405	234	34	83
1946–47	604	201	805	357	49	406	241	32	84
1947–48	641	208	849	360	48	407	241	28	91
1948–49	670	220	890	353	48	401	236	25	91
1949–50	689	228	917	352	53	405	235	26	91
1950–51	726	243	969	353	52	405	237	25	91
1951–52	742	236	978	349	47	396	236	25	88
1952–53	723	210	933	356	48	405	241	23	92
1953–54	759	231	990	358	50	407	241	23	94
1954–55	785*	240*	1025*	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.

n.a. = not available.
* Private estimate.

SOURCE: Commonwealth Bureau of Census and Statistics.

did not return. This, together with the sharp decline in the importance of unpaid family labour both during and since the war, suggests that there may have been some measure of disguised unemployment or at least underemployment in the agricultural industries before 1939. A most serious long-term aspect of the decline in the rural work force is the distortion produced in the age structure. The 1947 census revealed clearly that it was the members of the younger age groups which had been lost to agriculture.

The casual male work force of 87 thousand at March 1954 is probably about 25 per cent below the prewar level, judging by statistics for New South Wales. It has been suggested, from the study of wage data for this state (the only state for which data is available over a long period), that the actual labour input of casual employees is about the same as it was before the war, the depleted number of workers simply being in more constant employment.

(c) *Capital Investment*

As might be expected, the rural labour shortages in the post-war period have fostered mechanisation. The statistical picture, imperfect though it be, reveals a steady increase in traditional uses of machines such as for shearing and milking, but in addition some dramatic increases in the use of specific new machines. The number of tractors in use doubled between 1949 and 1954. This sharp rise in tractor numbers, accompanied as it was by a comparatively small rise in crop acreage, is probably to be explained in part as purchases by livestock producers to enable them to undertake pasture improvement. The

emphasis on pasture development has also been reflected in increased purchases of fertiliser and seeding attachments and forage harvesting equipment.

Wider use of mechanical equipment is but one manifestation of the substantial capital investment that has been a feature of Australian agriculture since the war and particularly in the past four or five years. Unfortunately farm investment has long been a "no man's land" from a statistical standpoint. However, lately some estimates of the gross investment in agriculture in the years since 1945 have become available. These are reproduced in Table III.[2]

Whatever their shortcomings, the figures quoted clearly indicate the extent of the upsurge in rural investment after the war. Since 1949-50 investment in the agricultural sector has exceeded investment in manufacturing, but the total amounts involved are comparable. Gross investment per annum in agriculture in money terms is currently running at about ten times the prewar figure, whereas the rate of manufacturing investment is probably between four and five times the prewar rate. The upsurge in investment following the wool boom of 1950-51 is quite marked, but the rise in income took some time to manifest itself fully on the investment side. This is brought out if one compares the trend in rural investment with the rough estimate of farmers' savings reproduced in Table III.[3] In part the explanation lies in shortages of materials but there was also the disturbing influence of widely fluctuating tax commitments as well as some lag in the

2. The most widely-used estimate of rural investment is the Commonwealth Statistician's estimate of the farm component of gross private expenditure on capital equipment other than buildings and motor vehicles. It seems to be generally accepted that aggregate rural investment is of the order of double these figures. Even so, the Statistician's figure is probably a reliable indicator of trend in rural investment. Table III also includes some estimates of aggregate rural investment in buildings and equipment (including rural motor vehicles). These cover essentially depreciable assets. They do not include expenditure on clearing, land improvement, soil conservation and pest control, expenditure which, under sections 75-76 of the Income Tax Assessment Act, is totally deductible for taxation purposes. The prevailing belief seems to be that investment of this type is relatively insignificant.

I have reservations about accepting this generalisation. In the first place, recent agricultural developments have probably altered the order of magnitude of this category of investment considerably. In the second place, actual outlays by farmers on equipment and supplies for work of this kind may give little clue as to the net addition to farm capital resulting from such work. The internal farm labour component in such capital works (and also farm buildings to a lesser extent) may be quite considerable. Added to this is the difficulty, experienced even at the individual farm level, of distinguishing clearly between current operating expenses and expenditure of a capital nature. In short, the estimates of aggregate private investment in Table III underestimate the extent of gross capital formation in agriculture. Despite agriculture's increasing dependence on the market for capital equipment and materials, it still remains true that a sizeable amount of the developmental work is done by the farm labour force, as is patently true under pioneering conditions. The counterpart of this in secondary industry is probably negligible in the aggregate.

3. It is demonstrated even more clearly in data contained in a paper entitled "A Survey of the Expenditure Patterns of Graziers, 1949-54" by K. O. Campbell and R. W. Archer, presented to Section G, A.N.Z.A.A.S., 1955.

TABLE III

New Capital Expenditure in Agriculture and Manufactures

Year	Estimated Savings of Farmers	Investment in Farm Equipment	Investment in Farm Buildings and Equipment			Investment in Factory Buildings and Equipment			Public Authority Expenditure on Irrigation, Forestry and Land Development		
			Actual	Percentage of Gross Private Investment	Percentage of Gross Investment	Actual	Percentage of Gross Private Investment	Percentage of Gross Investment	Actual	Percentage of Total P.A. Expenditure	Percentage of Gross Investment
	£m.	£m.	£m.	%	%	£m.	%	%	£m.	%	%
1938–39	—	7	14	11·5	7·6	—	—	—	—	—	—
1945–46	—	12	—	—	—	—	—	—	—	—	—
1946–47	—	14	—	—	—	—	—	—	7	7·7	2·6
1947–48	30	18	38	17·3	11·6	50	22·7	15·2	9	8·3	2·7
1948–49	64	27	56	18·7	12·7	60	20·1	13·6	11	7·8	2·5
1949–50	153	40	86	20·4	13·9	72	17·1	11·6	16	8·1	2·6
1950–51	277	59	124	21·9	14·5	94	16·6	11·0	22	7·6	2·6
1951–52	115	69	145	20·1	13·0	120	16·7	10·8	29	7·4	2·6
1952–53	227	59	126	19·8	12·3	117	18·4	11·4	27	6·9	2·6
1953–54	75	70	142	19·6	12·7	111	15·3	9·9	28	7·1	2·5
1954–55	—	—	170	20·4	13·7	127	15·2	10·2	29	7·0	2·3

SOURCES: The estimate of savings is exceedingly crude, being based on the assumption, following H. P. Brown (1953 Basic Wage Enquiry evidence) and D. G. Badger (*Economic Papers No. 10,* p. 75), that recipients of personal income other than farmers, save 10 per cent of their income.

The figures quoted for investment in farm equipment represent an estimate by the Commonwealth Statistician of expenditure on some of the major items of farm equipment. They are included in the series, "Other Capital Equipment", published annually in the White Paper on *National Income and Expenditure.* For the estimates of aggregate expenditure on buildings and equipment by farm and manufacturing enterprises, I am indebted to Mr. Bruce M. Cheek of the Australian National University. Public Authority Expenditure has been obtained directly from the White Paper.

adjustment of spending habits. The overall result has been that capital outlay in the agricultural sector has been maintained at a high and relatively stable level during the past four years in spite of quite considerable fluctuations in aggregate income.

Although Australian farmers have not shared anywhere nearly equally in the boom incomes of recent years, nevertheless the pervasiveness of the sheep enterprise on Australian farms has meant that a high proportion of farmers did receive sizeable increments in income. Because of this product diversification, a substantial part of recent investment in machinery for wheat production, for instance, has been financed out of what were actually profits derived from wool production.

An interesting feature of the overall investment picture is the comparatively stable proportions of total investment funds being invested in the agricultural and manufacturing industries, whether the proportions are calculated in terms of gross private investment or of total investment.

Apart from rural investment on private account, there is an appreciable amount of public investment of direct relevance to this sector of the economy, though its significance may be declining over the years. It is, of course, difficult to assess the exact proportion of public authority expenditure (especially investment in public utilities) which can be regarded as being of direct benefit to particular industries. However, examination of the published figures for investment in irrigation and land development (including forestry) indicates that this class of investment has merely kept pace with the general rise in expenditure on public works and investment as a whole. There has been some change in the direction of investment within this category. For instance, the land settlement component dropped steadily from its high point in 1947-48.

The impression that the recent upsurge in rural investment has been financed primarily from current income or recent savings is confirmed by the statistics for bank advances and estimates of rural indebtedness (Table IV). Since banks and comparable lending institutions are the predominant source of external capital for agriculture, movements in borrowings from such institutions are of much greater significance than in the case of manufacturing businesses. Manufacturers doubled their use of bank finance between December 1950 and June 1952. Bank advances to manufacturers then dropped but rose again sharply after June 1954. In contrast, bank advances to rural borrowers rose fairly steadily from £110 million to about £150 million in the four years between June 1949 and June 1953, i.e. at an average rate of £10 million per annum. In the following eighteen months, rural advances increased at a rate of about £40 million per annum. However

the increase in agricultural advances has been matched by increased credit extension in other directions. In fact, the proportion of total advances going to agriculture was smaller in June 1955 than it was in June 1949.

TABLE IV

Bank Advances and Rural Indebtedness

Month and Year	Advances to Manufacturers			Advances to Primary Producers			Estimated Rural Indebtedness	
	Actual	Index June 1949 = 100	% Total Advances	Actual	Index June 1949 = 100	% Total Advances	Actual	Index June 1949 = 100
	£m.		%	£m.		%	£m.	
June 1939	n.a.	—	—	n.a.	—	—	297	131
June 1942	n.a.	—	—	n.a.	—	—	274	121
June 1945	n.a.	—	—	n.a.	—	—	242	107
June 1946	n.a.	—	—	n.a.	—	—	246	108
June 1947	n.a.	—	—	n.a.	—	—	244	107
June 1948	n.a.	—	—	n.a.	—	—	229	101
June 1949	96·5	100	22·5	109·4	100	25·5	227	100
Dec. 1949	93·6	97	20·8	108·5	99	24·1		
June 1950	92·9	96	19·1	117·8	108	29·2	247	109
Dec. 1950	96·5	100	17·3	118·9	109	21·3		
June 1951	114·0	118	19·5	125·1	114	21·4	277	122
Dec. 1951	158·5	164	22·3	131·2	120	18·5		
June 1952	193·3	200	25·7	143·9	132	19·1	305	135
Dec. 1952	164·7	171	23·9	145·1	133	21·1		
June 1953	141·5	147	21·1	148·3	136	22·1	315	139
Dec. 1953	140·9	146	19·3	165·6	151	22·7		
June 1954	139·3	144	17·6	192·3	176	26·4	373	164
Dec. 1954	160·6	166	18·6	210·6	193	24·4		
June 1955	190·7	198	20·6	220·9	202	23·8	n.a.	n.a.

n.a. = not available.

SOURCES: Bank Advances: *Statistical Bulletin of the Commonwealth Bank of Australia*;
Rural debt: Extension of estimates published in I. A. Butler's paper on "Expansion of Rural Production in Australia", presented at the 1952 meeting of A.N.Z.A.A.S.

The limited use of bank credit by farmers and graziers in the early 'fifties was partly a reflection of buoyant incomes, but it needs to be remembered that official bank advance policy at this time emphasised repayment rather than new borrowing. Rural advances have been more freely given in late years. Indeed, the Commonwealth Trading Bank has recently offered particularly attractive terms to some of its own clients in an effort to get them to borrow for purposes of farm development.

The estimates of rural indebtness given in Table IV include (in addition to bank advances) advances by government agencies, state banks, life assurance and pastoral companies, but still exclude private mortgages, hire purchase agreements and loans by stock and station agents. They indicate that, except for a slightly lower level in the

years 1948 and 1949, rural debt at the end of each financial year from 1945 to 1950 was just under £250 million. The movement since then roughly follows the trend of bank advances to agriculture, though there is some evidence that non-bank lenders were relatively more active in the 1950-51 season. Though no quantitative data are available, it seems to be widely accepted that farmers have participated in the recent increase in hire-purchase business just as actively as other sections of the community.

(d) *The Supply of Production Requisites*

One difficulty in assessing the recent investment boom in Australian rural industries is to know the exact extent to which it is being damped down or prolonged by shortages of production materials and capital goods. Such shortages have been a prominent feature of the rural scene ever since World War II. Of course, the extent of recent investment and its nature would in itself tend to prolong shortages. For instance, temporary shortages of specific strains of grass seeds and clovers and intensification of the demand for superphosphate are a natural corollary of any rapid expansion of the area of sown pastures. The increasing productive capacity of fertiliser plants does not seem to be catching up on the rising demand for superphosphate. On the other hand, tractors and agricultural machinery generally are more freely available now than at any period since the war. However, there are still shortages of specialised equipment like headers and pick-up balers. The International Bank loans are partly responsible for this improvement in supplies of machinery.

Local production of steel posts, fencing wire and building materials such as galvanised iron is still lagging well behind demand. The flood damage which occurred during the early part of 1955 intensified supply difficulties in the short run. Imports offer little prospect of easing the overall situation as long as they cost more than the local product. In some of these lines, where agriculture competes with other sectors of the economy for limited supplies, the impression is obtained that the rural industries are frequently placed at a disadvantage due to their atomistic and scattered nature.

The picture that emerges from this brief survey of recent agricultural development is one of erratic movement followed lately by an appreciable lift in output, to a level about 20 per cent above the prewar base. This higher output has been achieved with virtually a constant land base, by an aggregate permanent work force which is now about 5 per cent smaller than it was in 1938-39, and with capital investment proceeding at an unprecedentedly high rate. Considered in terms of the sixteen-year period since 1939, the rate of production increase and the rate of increase in productivity per worker is not outstanding, being

comparable with the rate of growth in the preceding decade and a half. The rate of increase in productivity is, moreover, only about one-third to one-half of the rate of increase which has been achieved by Canada and the United States over a similar period.[4] Part of the explanation for this differential rate of growth undoubtedly lies in the relatively minor importance of crop production in Australia.

2. *The Role of Technological Progress*

I turn now to consider some of the implications of the recent pattern of growth of Australian agriculture as regards the utilisation of resources. It seems to me that the prime inference to be drawn from recent experience is the pre-eminent role which needs to be assigned to technological improvement in any assessment of the rate or direction of growth of the agricultural sector. In Australia, as in some other countries, the significance of new technology has been rather neglected. Influenced by neo-classical theory, and also by the historical development of European agriculture, Australian writers have approached the question of the utilisation and productivity of agricultural resources primarily from the standpoint of more intensive use of labour and capital rather than that of improvement in technology.[5] It is true that capital investment in agriculture has recently been maintained at a high rate, but it is equally true that its form and magnitude have been determined to a large extent by emerging technological developments. Judging by the increasing outlays on fundamental and applied research, coupled with the current emphasis on improving the facilities for carrying new ideas, practices and technologies to the farm and hastening their adoption, it would seem that technological advance is destined to remain the dominant factor determining the direction and rate of growth of aggregate rural output in Australia in the years ahead.

The possibility of increases in inputs of major resources is not ruled out. But, except for capital inputs associated with the adoption of new techniques, I do not anticipate that inputs of other resources are going to alter significantly. In short, the pattern of growth since the war is likely to be the prototype for the immediate future.

4. Keith O. Campbell, "The Conditions of Increased Productivity in Agriculture", *Journal of the Australian Institute of Agricultural Science*, Vol. 19, No. 2 (June 1953), p. 67.

5. In this connection it is interesting to note, in the early issues of the *Economic Record*, the unsuccessful attempt by Benham to convince Brigden that he should recognize explicitly the possibility of technical advance in agriculture in the model of Australian industrial development on which he was then working—a model which subsequently formed the framework of the policy recommendations of the 1929 report on the Australian tariff. See particularly F. C. Benham, "The Australian Tariff and the Standard of Living—A Reply", *Economic Record*, Vol. II, No. 2 (May 1926), pp. 20-42.

Of course, if we assign a dominant role to technological progress as the determinant of agricultural growth, the analysis of necessity becomes more diffuse and less elegant than the earlier model. We are confronted with the difficulty of predicting the nature of impending changes, with problems associated with the diffusion of new techniques and with legal and institutional factors conditioning their adoption. These are all areas on which existing knowledge leaves much to be desired.

It is nevertheless important to recognize that technical advances in agriculture are diverse in type and that their relative and absolute effects on the employment of resources in the industry are likewise variable. On the one hand, some innovations, the adoption of which involves the farmer in negligible additional costs, have a dramatic effect upon output. Myxomatosis, which contributed to the 1951-52 and subsequent lift in rural output, is an example. Indeed, in this case, the effects of the virus were often made manifest even in the absence of any direct decision or action on the part of the farm operator. The correction of minor-element deficiencies, the introduction of improved varieties, and the use of new hormones and pesticides are also of this class. The potentialities in these directions have not yet been fully exploited by any means.

Mechanical innovations which, by and large, are labour-saving and capital-using, have been a feature of agricultural development since the advent of the tractor. Their effect on output, on the other hand, can be neutral. New and improved machines are likely to continue to be turned out and the adoption of these and existing types of machines will become more widespread, but it seems to me that their impact on Australian agriculture in future may be less dramatic than in the immediate past.

It is a third class of innovation, typified by pasture improvement which, in my opinion, is likely to dominate the Australian scene in the period immediately ahead. The introduction of pasture improvement often makes heavy demands upon the farmer's capital resources, but is ultimately land-saving. The widespread adoption of such a practice could conceivably increase the demand for agricultural labour. Two factors are likely to offset any tendency in this direction. In the first place, the existing permanent labour force on many Australian pastoral holdings is not fully extended and could in many cases handle increased stock numbers. Secondly, both on pastoral properties and, to an even greater extent, on farms where cropping is conducted in association with grazing, savings in labour achieved as a result of mechanisation may just about match the labour demands of the expanded livestock enterprises arising from the increase in the carrying capacity of the pastures.

3. *The Rural Labour Market*

In any discussion of the effect of economic growth on the distribution of resources between industries, there are certain basic characteristics of the supply of labour and capital to agriculture, which need to be explicitly recognized. Consider first the agricultural labour market. Though the absolute numbers engaged in Australian agriculture are tending to stabilise, the agricultural work force continues to decline in relative importance. The outflow of persons from agriculture will continue if only because rural fertility rates are such that the rural population more than reproduces itself.[6] Labour movement relative to agriculture is almost entirely along a one-way street. Even when the terms of trade become extraordinarily favourable to agriculture, as they did in the early 'fifties, rural-urban migration continues almost unabated.[7]

Any assessment of the exact extent to which farmers and graziers offered increased wage rates during recent years in an effort to retain more rural workers is rendered difficult by the absence of reliable statistics of actual wage rates. There is some evidence of payment of rates above the relevant awards, such as occurred in the pastoral industry before the wool-value allowances were introduced. The decline in the number of unpaid family workers is also of some significance. But by and large, it would seem that rises in rural wages (with the exception of casual rates in the pastoral industry) have just about kept pace with the rate of rise of Australian wages in general and that rural employers have made little effort to offer wages attractive enough to hold back potential migrants. The recent extension of state awards to cover more rural industries is unlikely to change the situation significantly. Most enterprising farmers would already be paying at least the basic wage and the margins provided in the awards are generally negligible. In short, it would appear that despite the relatively prosperous state of Australian rural industries and alleged labour shortages, the traditional rural-urban wage differential in this country has

6. The reasons why rural-urban migration has proceeded without undue friction in Australia despite a highly centralised industrial structure and scattered settlement, still remain to be investigated. Australia has never experienced anything comparable to the depressed agricultural areas of other advanced economies.

7. Some differential movement as between regions may nevertheless occur. Reference to N.S.W. regional statistics, with respect to permanent rural labour for the period since 1947, shows the most pronounced decline (20·4 per cent) in the rural work force in the County of Cumberland (i.e. the Sydney region). The remainder of the coastal belt shows a decline of between 5 and 7 per cent. This can be explained partly in terms of the unattractiveness of dairying, partly in terms of the location of secondary industries. In contrast, in the western plains and Western Division of the State, where pastoral activities predominate, rises of between 12 and 20 per cent were recorded. Rural employment in the tablelands and slopes was relatively static except for pronounced increases in the Southern Tablelands and North Western Slope.

not been significantly affected.[8] The wage data for New South Wales reproduced in Table V seem to confirm this view.

TABLE V

Wages Paid to Agricultural and Factory Employees—New South Wales

Year	Average Annual Wage per Male Permanent Farm Employee*	Average Annual Wage per Male Factory Employee†	Farm Wages as Percentage of Factory Wages
	£	£	%
1925–26	184	240	76·7
1926–27	192	251	76·5
1927–28	190	257	73·9
1928–29	189	259	73·0
1929–30	182	260	70·0
1930–31	162	244	66·4
1931–32	154	226	68·1
1932–33	146	214	68·2
1933–34	143	207	69·1
1934–35	140	209	67·0
1935–36	141	212	66·5
1936–37	147	216	68·1
1937–38	155	230	67·2
1938–39	155	240	64·6
1939–40	158	247	64·0
1940–41	163	265	61·6
1941–42	178	309	57·6
1942–43	n.a.	345	n.a.
1943–44	n.a.	352	n.a.
1944–45	n.a.	343	n.a.
1945–46	n.a.	335	n.a.
1946–47	n.a.	355	n.a.
1947–48	240	406	59·1
1948–49	265	456	58·2
1949–50	304	499	61·0
1950–51	372	609	61·1
1951–52	468	757	61·8
1952–53	515	808	63·8
1953–54	569	844	67·4
1954–55	598	907	65·9

n.a. = not available.

* Total wages (including value of board and lodging) paid to male permanent farm employees (including juveniles) during the year ending 31st March divided by the number of permanent employees at that date.

† Total factory wages (excluding drawings by working proprietors) paid to male employees during the year ending 30th June divided by the average number of employees over the whole year (excluding working proprietors but including juveniles).

SOURCE: N.S.W. Bureau of Statistics and Economics.

8. The exact measurement and interpretation of the differential is, of course, beset with great statistical difficulties. See particularly Margaret G. Reid's comments in Conference on Research in Income and Wealth, *Studies in Income and Wealth* (New York, 1949), Vol. XI, pp. 179-206. From my own investigation of the position in Australia in the late 'thirties I believe that average farm wages were about 60 per cent of comparable factory wages at that time. This is in line with Colin Clark's subsequent revised estimate published in the second edition of *The Conditions of Economic Progress* (London, 1951), p. 457.

The opportunity for self-employment in agriculture will always be an inducement for labour to remain on farms. However, the capital requirements needed successfully to establish independent farms, particularly when considered in relation to rates of wage remuneration, suggest that little increase in the work force from this direction is likely. Governmentally-sponsored closer settlement also seems destined to make little impression on the overall labour situation for much the same reason. Greatest opportunities would appear to be in the direction of sharefarming arrangements but, in the past, this form of tenancy has been restricted to a limited number of enterprises.

In summary, agriculture has not, at least to date, competed in any direct sense with the manufacturing industries for labour supplies. The most that rural industries seem to be able to do is to retain more or less of the annual population outflow. It appears to be extremely difficult for them to induce labour, especially hired labour, to move from non-rural to rural employment.

Migrant labour also has not proved to be the boon in agriculture that it has been for the manufacturing and construction industries. Given the psychological attitudes of the Australian farmer and the migrants' language difficulties, lack of local skills, and unfamiliarity with the extensive form of agricultural occupation found in this country, the relative lack of success that attended the use of migrant labour in agriculture is not surprising.

4. *Sources of Capital for Agriculture*

The sources of capital for investment in rural industries are also such that agriculture and manufacturing compete directly for funds only to a limited extent. It has been sagely observed that the three ways of obtaining capital for farming are "patrimony, matrimony and parsimony".[9] Despite their great importance, there is little that can be said about the first two sources in an economic context. Even though, in any particular generation, personal savings are probably less in the aggregate than the capital secured from the other two sources, it is the main source of finance for new capital improvements. Perhaps because of this state of affairs, farmers as a group traditionally have had a higher propensity to save than other sections of the community.

9. There is, in addition, a limited amount of direct investment in farm properties by city business and professional men. But this is offset by a continuous outflow of capital from agriculture in the form of transfers by farmers retiring to the city and the inheritance of farming capital by children and other relatives in non-rural occupations. Moreover, there is the considerable loss of rural capital through investment in the training and upbringing of children in rural areas who subsequently migrate to secondary or tertiary industries. For some specific estimates, see E. J. Long and P. Dorner, "Excess Farm Population and the Loss of Agricultural Capital", *Land Economics*, Vol. XXX, No. 4 (November 1954), pp. 363-368.

The total amount of farmers' savings available for investment in any given time period is mainly a function of the level of farm income. The relatively high rate of rural investment in Australia in recent years, as we have seen, must be explained largely in such terms. The rate of adoption of innovations and the level of investment in the future will likewise depend importantly on the receipt of adequate incomes.[10]

Typically there is no clear hiatus between saving and investment in agriculture. Farmers generally speaking are not inclined to hold liquid funds against possible future contingencies. They tend rather to use any surplus income in acquiring more land or improving their existing properties. Relatively few farmers invest in non-rural enterprises and any investment in bonds is usually temporary only.

In overseas countries, tenancy offers one means for the potential farm operator to get the use of capital assets. Though in Australia government leasing of land is widespread, leasing of improved farms from private landlords is very limited in extent and what there is leaves much to be desired as regards the efficient use of resources.[11]

Equity financing in agriculture being almost insignificant, the banking system is therefore the principal institutional means by which external capital can be channelled into agriculture. But banking conventions ill-adapted to the needs of agriculture, and the non-commercial attitudes of some farmers towards borrowing, frequently act as barriers to the transfer of capital to rural industries. Even so, it is here that the manufacturing and agricultural industries do directly compete for part of their capital requirements.

We have seen that incipient agricultural development is likely to be capital-demanding in nature. In the absence of "windfall" incomes similar to those of the early 'fifties, a considerable capital inflow into agriculture will be required to maintain a high rate of agricultural progress. This puts a special onus on the banking system because of its peculiar position in relation to agriculture. Despite some encouraging signs, there is still evidence that agriculture's credit requirements are being inadequately met by the banking system. Consider, for instance, how much easier it normally is for a man to get bank accommodation to acquire additional land than to finance a pasture improvement programme on his existing property. Part of

10. It is not without significance that in our investigations of the recent investment behaviour of farmers, we have found that soldier settlers have tended to lag behind in the adoption of the capital-demanding innovations. Parish and Dillon have observed the same phenomenon on the South Western Slope of New South Wales. See Parish and Dillon, "The Grazing Industry in the South West Slopes", *Review of Marketing and Agricultural Economics*, Vol. 23, No. 2 (June 1955), pp. 66-69.

11. L. J. Dillon, "Dairy Farm Tenure in the Big Scrub Area of the Richmond-Tweed Region", *Review of Marketing and Agricultural Economics*, Vol. 22, No. 4 (December 1954), pp. 239-269.

this reluctance to lend on developmental programmes doubtless arises from production uncertainty as well as from lack of precise technical information as to the potentialities of specific classes of country. Nevertheless any effort on the part of banks to reduce the imperfections in agriculture's capital market (such as the Commonwealth Bank's recent limited experiment in farm development) would do much to facilitate agricultural expansion.

5. *Conclusion*

In summary, the prospects are for an expanding output from the agricultural sector, achieved primarily through application of technological advances and associated capital investment rather than through any substantial increase in the rural work force. The provision of funds for capital investment being heavily dependent on internal accumulation within agriculture, the magnitude of such growth is likely to be determined by the trend in farm income rather than as a result of direct competition with secondary industries for outside capital.

KEITH O. CAMPBELL

University of Sydney.

NOTES

FORCED SAVING AND THE MULTIPLIER

The simple Keynesian interpretation of the process of income formation which follows upon an injection of new purchasing power is that the level of income rises until sufficient monetary saving is generated—through the operation of the marginal propensity to consume—to offset the additional spending.

On the other hand, it is held that, during an inflationary period, some sections of the economy—those which cannot adjust their incomes to the price rises—lose some of their command over resources. These resources are thus freed to satisfy the demands of those who can adjust their incomes. This freeing of resources has been called "forced" saving.

To my knowledge, these two processes have not been reconciled, and this I propose to do in the following.

A fully employed economy is assumed, with no productivity or population increase to be allowed for: total output is constant and is considered here to be measured by the value of total income in the initial equilibrium situation. Income (Y) is initially to be considered as divisible into n parts; M^1, M^2, . . . M^n; such that $\frac{M^i}{Y_o} = m^i$ where $\Sigma m^i = 1$ and Y_o is the initial value of income. These separate parts are to be considered as able to adjust to price increases to varying extents: i.e. if price increases from P_o to $P_o + \Delta P$, then M^i changes to $M^i(1 + r^i \frac{\Delta P}{P_o})$, where $r^i \gtrless 1$. If we let $P_o = 1$, this may be re-written as:

M^i becomes $M^i(1 + r^i \Delta P)$,
or: $m^i Y_o$ becomes $m^i Y_o(1 + r^i \Delta P)$.

Thus the initial situation will be one where:

$$Y_o = \Sigma m^i Y_o = C_o + S_o = C_o + I_o$$

Where C = consumption; S = monetary saving; and I = investment.

The process to be employed will be one in which all interactions take place immediately, so that the final result is obtained in one operation. This is achieved by arranging that all variables have the same "date"—they are completely inter-dependent. To save confusion later it may be mentioned here that the values which are associated with the initial situation are taken as constants for the purpose of subsequent periods. These include Y_o, m^i, M^i, r^i. Some, such as r^i, are equally in existence in subsequent periods, as obvious constants.

In period 1 we assume an increment of investment, ΔI, financed, let us say, by an advance of credit. We then have:

$$Y_1 = \Sigma M^i (1 + r^i \Delta P) \quad \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots \quad (1)$$

$$P_1 = \frac{Y_o + {}^1\Delta C + {}^1\Delta I}{Y_o}$$

which, if we introduce a consumption function of the form $C = aY + b$, may be written:

$$P_1 = \frac{Y_o + a\Delta Y + {}^1\Delta I}{Y_o}$$

and $${}^1\Delta P = \frac{a\Delta Y + \Delta I}{Y_o}$$

Substituting this in (1) gives;

$$Y_1 = \Sigma M^i \left[1 + r^i \left(\frac{a\Delta Y + \Delta I}{Y_o}\right)\right]$$

$$= Y_o + \Sigma m^i r^i (a\Delta Y + \Delta I) \quad \ldots\ldots\ldots\ldots\ldots \quad (2)$$

remembering that $M^i = m^i Y_o$.

But: $$Y_1 = Y_o + \Delta Y \quad \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots \quad (3)$$

From (2) and (3) we get:

$${}^1\Delta Y = \left(\frac{1}{\frac{1}{\Sigma m^i r^i} - a}\right) \Delta I \ldots\ldots\ldots\ldots\ldots\ldots \quad (4)$$

It follows that:

$${}^1\Delta P = \frac{{}^1\Delta I}{Y_o}\left(\frac{1}{1 - a\Sigma m^i r^i}\right) \quad \ldots\ldots\ldots\ldots\ldots\ldots \quad (5)$$

Equations (4) and (5) give us all we need to investigate the relation between "monetary" and "forced" saving in the inflation we have created.

The question is: does the increment of income provide sufficient monetary saving to offset the initial increment of investment spending?

$$\Delta S = (1 - a)\ \Delta Y$$

which, from (4):

$$= (1 - a)\left(\frac{1}{\frac{1}{\Sigma m^i r^i} - a}\right) \Delta I$$

From this it is clear that only if $\Sigma m^i r^i = 1$ will the increment of monetary saving exactly offset the increment of investment spending. If $\Sigma m^i r^i$ is not equal to 1, there will be a gap between the provision of additional monetary saving and the increment of investment spending. This gap is provisionally called the measure of "forced" saving. If this is justifiable, then we should be able to fill it by investigating the real losses (or gains) made by the various sections M^i through variations between their rates of change and that of the price level.

The gap itself is:

$$\Delta I - \Delta S = \Delta I - (1-a)\left(\frac{1}{\frac{1}{\Sigma m^i r^i} - a}\right)\Delta I$$

$$= \Delta I\left(\frac{1 - \Sigma m^i r^i}{1 - a\Sigma m^i r^i}\right) \quad \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots (6)$$

Now consider sector M^i. If this sector had been able to maintain its real earnings, it would have expanded at the same rate as the price level. In fact, it did not (unless, of course, $r^i = 1$). The difference between its actual value in period 1 and what it would have been if it had maintained its real value will be a measure—in period 1's prices —of its loss or gain in real terms. This difference is:

$$\begin{aligned} & M^i(1 + r^i\Delta P) - M^i P_1 \\ &= M^i(1 + r^i\Delta P) - M^i(1 + \Delta P) \\ &= M^i(r^i\Delta P - \Delta P) \\ &= m^i Y_o \Delta P(r^i - 1) \\ &= Y_o \Delta P(m^i r^i - m^i) \end{aligned}$$

substituting for ΔP, from (5):

$$= \Delta I\left(\frac{m^i r^i - m^i}{1 - a\Sigma m^i r^i}\right) \quad \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots (7)$$

If this is positive, there has been a real gain, if negative a real loss. Only where $r^i = 1$ will there be no loss or gain.

The net gain or loss for the whole economy will be the sum of these individual amounts, i.e.:

$$\Sigma\Delta I\left(\frac{m^i r^i - m^i}{1 - a\Sigma m^i r^i}\right)$$

$$= \Delta I\left(\frac{\Sigma m^i r^i - 1}{1 - a\Sigma m^i r^i}\right) \quad \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots (8)$$

This, of course, is of exactly the same magnitude as the gap between saving and investment, though of different sign. Thus, where the increment of investment exceeds the increment of monetary saving, there has been a net real loss somewhere in the economy which may be measured by this difference in terms of P_1. This net real loss represents a transfer of command over commodities which is compulsory, as opposed to the voluntary transfer represented by the increment of monetary saving.

A simple example might show this a little more clearly. Let there be only two parts into which income may be divided, M^1 and M^2. Let $r^1 = 0$ and $r^2 = 1$, that is, M^1 represents a fixed income, and M^2 one which varies to exactly the same extent as the price level. We then get the following results:

From (6) $\Delta I - \Delta S = \Delta I\left(\frac{1-m^2}{1-am^2}\right)$

$= \Delta I\left(\frac{m^1}{1-am^2}\right) \quad (m^1 + m^2 = 1)$

From (7)

"Forced" saving:

M^1: $\Delta I\left(\frac{-m^1}{1-am^2}\right)$

M^2: $\Delta I\left(\frac{0}{1-am^2}\right) = 0$

Hence net loss for the community falls on M^1, and this net loss just offsets the difference between the increments of investment and monetary saving.

The conclusion is, then, that an increment of new investment will be offset in two parts. The consequent price rise will increase incomes to provide additional monetary saving, and will forcibly transfer some purchasing power away from those income earners whose incomes do not rise as fast as prices. The voluntary transfer of purchasing power (monetary saving) together with the forced transfer ("forced" saving) will together offset the investment increment. The relation between the two forms of "saving" depends upon the size of the average rate of adaptation of income to prices: namely $\Sigma m^i r^i$. Naturally for individual sectors there may be forced saving, but if $\Sigma m^i r^i = 1$ there will be no *net* "forced" saving, and monetary saving will rise to the full extent of the increment of investment.

Further, the extent of the price rise and income increase depend upon $\Sigma m^i r^i$, increasing as it increases. In the full model above, if $\Sigma m^i r^i$ approaches a value of $\frac{1}{a}$ the situation becomes explosive, both P_1 and Y_1 tending towards infinity. This is explained by the emergence of large net *gains* in the economy, with income and prices having to increase rapidly in order to provide monetary savings sufficient to offset the sum of the investment increment and these net gains. $\Sigma m^i r^i = \frac{1}{a}$ determines a limiting value, with net gains infinitely large, as may be seen from (8).

It may be mentioned that in real terms these net gains are illusory, they merely indicate that the aggregate income at the current price level has outstripped the available supplies. Provided the surplus is saved, the new equilibrium will not be disturbed, and the saved money will represent the net gains as potential (sterilised) gains.

Let us take another look at the average rate of adaptation of income to prices, $\Sigma m^i r^i$. Imagine that it can be divided into two

sections, namely $\Sigma(m^j r^j) + \Sigma(m^k r^k)$ $(j = 1, 2, \ldots h : k = h+1, \ldots n)$, where all the r^j are greater than one, and all the r^k are less than one. Strictly speaking, some of them might equal one, but for the moment this is irrelevant—such $m^i r^i$ may be placed in either group. Then we have:

$$\Sigma m^i r^i = \Sigma m^j r^j + \Sigma m^k r^k.$$

Now imagine two situations, in one of which the value of Σm^j is greater than in the other. In general this will raise the value of $\Sigma m^i r^i$ for the first situation above that of the second, and thus it will increase the increment of income and prices necessary to achieve an equilibrium in period 1. It will also reduce the net forced saving, or increase the net gains.

Tentatively, then, one might say that the larger is the proportion of total income which is able to adapt to the price change—or to outpace it—the more severe will the inflation be, and the more important the function of monetary saving as opposed to forced saving in offsetting the original increment to purchasing power.

In conclusion, the above indicates the dangers inherent in estimating a marginal propensity to consume from an empirically discovered multiplier, and *vice versa*. In the model outlined here, for example, we would also need information about the average rate of adaption of income to prices before we could make a reasonable estimate.

C. S. Soper

University of Cape Town.

UNEMPLOYMENT IN NEW ZEALAND DURING THE GREAT DEPRESSION[1]

Some utterances by New Zealand writers throw a very gloomy light on the employment situation in New Zealand during the Great Depression, and hence on the functioning of the economic order then in force. W. B. Sutch, *The Quest for Social Security* (London 1942, p. 123) says: "For nearly two years registered unemployed males numbered over 70,000, the record being 79,587 in October 1933. This total did not include those under twenty (apprentices had dropped by 6,500 since the pre-depression days), those who had not registered because of pride or a pauper income, nor those who had passed into the old age pension class. There were probably close on 100,000 unemployed males; leaving aside public servants and farmers and those with businesses of their own, this represented two-fifths of the male workers between sixteen and sixty-five". According to Condliffe-Airey, *A Short History of New Zealand* (7th edition 1953, completely revised

1. The writer's thanks are due to the Government Statistician for information supplied. Only the writer is responsible for the contents of this note.

and extensively rewritten by W. T. G. Airey, p. 209) "registered unemployment rose to over 76,000" and "it has been estimated that two-fifths of the normal male working population between 16 and 65 years old were unemployed". The last statement suggests a rate of unemployment even greater than that indicated by Sutch.

Is this gloomy light also the light of truth? An attempt to answer this question encounters some difficulties: there are no labour force figures available other than those from the 1926 and 1936 censuses; definition of the concept "unemployed" is difficult and to some extent arbitrary; and definition of the concept "labour force", to which the number of unemployed is to be related, is to some extent a matter of opinion. Nevertheless, the attempt is worth while and will be made. It is based on the section on Employment and Unemployment in the 1938 *N.Z. Official Year Book*, and on Appendix (a) (statistics of the 1936 census) to the 1939 *Year Book*. The figures that follow are either quoted or derived from these official sources; no other sources seem to be available.[2]

At 30th September, 1932, a point of time at the depth of the depression,[3] there were (a) 6,540 males "remaining on unemployed registers but unplaced or uneligible for various reasons", (b) 45,100 males "in receipt of part-time relief, scheme No. 5 (rationed work)" (registered as unemployed), and (c) 22,010 males "working full time in industry with assistance from Employment Promotion Fund (not registered as unemployed)". There were, therefore, 51,640 registered unemployed males.[4] The male "occupied population" (including the unemployed) was 507,499 at 24th March, 1936. A reasonable estimate of the male occupied population at 30th September, 1932, is 480,000.[5] If we regard as unemployed the groups (a) and (b), the number of male unemployed was 10·8 per cent of the male labour force in the sense of male occupied population. If group (c) is added to the unemployed—but this seems stretching the concept "unemployed"—the percentage becomes 15·4.

2. Sutch and Condliffe-Airey do not mention any sources.

3. The unemployment figures for this date are the highest in the table on p. 804 of the *Year Book*, covering the years 1931 to 1937, at least when group (c) —see text—is not considered unemployed. If it is, the figure for 30th September 1933 is the highest, but the difference is less than 6,000. The labour force was larger in September 1933 than in September 1932.

4. At 30 September 1933 their number was 49,044. The table in the *Year Book* does not give a figure for October 1933 (the month referred to by Sutch in connection with his record number of registered unemployed males, 79,587). The next figure for 23 December 1933 is about 9,000 lower than the September figure. Airey's figure of "over 76,000" seems to refer to unemployment generally, without restriction to males. I have not discovered any figures of male and female unemployment, except in the 1936 census: total unemployment (according to the census definition) 37,744, of which 1,898 females. For the rest, the available statistics apply to males only.

5. The estimate is based on the rate of growth of the occupied population between the 1926 and 1936 censuses.

If one excludes from the male labour force one or more categories without excluding any categories from the unemployed (this is what Sutch does), one will naturally arrive at higher percentages. Is it reasonable to do so? There is much to be said for exclusion of working proprietors (including farmers), less for exclusion of public servants. The male working proprietors ("employers" and "own account") in September 1932 may be estimated[6] at 115,000. Their exclusion gives a male labour force in a narrower sense of 365,000 in September 1932, of which the unemployed (groups (a) and (b)) are 14·1 per cent. Inclusion of group (c) in the unemployed raises the percentage to 20·2. There is also a case for exclusion of "relatives, not paid wage or salary" from the labour force. Their number must have been approximately 10,000 in September 1932. If we exclude them, the unemployed were 14·5 per cent (groups (a) and (b)) and 20·7 per cent (all three groups) of the labour force in a still narrower sense.[7]

Although the worst of the depression was over at the time of the March 1936 census, it may be of interest to give some figures from this census. Wholly unemployed, including those engaged on rationed relief work, were 35,846 males, that is (according to the 1939 *Year Book*, p. 742) 9·5 per cent of all male wage earners. If one wishes to bring under the unemployed 16,252 males partly unemployed but not on relief work, the percentage becomes 13·8.

Whether unemployment in New Zealand was exceptionally severe on an international standard, is difficult to judge: statistics are incomplete, there are differences in definition of the concept "unemployed". Let figures for Britain and the Netherlands give at least a background to the New Zealand figures. In Britain, 20 per cent of the total number of insured workers was unemployed at the depth of the depression (H. Heaton, *Economic History of Europe*, New York 1948, p. 707). In the Netherlands the highest annual percentage of unemployed members of a considerable number of trade unions (total membership approximately 500,000) was 36·3 (this includes partially unemployed); and the highest annual proportion of totally unemployed (including those employed in public works especially undertaken to reduce unemployment) to the total male working population of 15 to 64 years (inclusive) was approximately 14 per cent, according to official figures, not taking account of non-registered unemployed.

C. WESTSTRATE

Canterbury University College.

6. On the basis of the 1936 and 1926 censuses.

7. If one narrows the concept labour force still further by excluding, as Sutch does, employees in the public services, the percentages become 15·9 and 22·7—still a long way from his two-fifths. The number of public servants is estimated at 31,000 for this calculation.

FULL COST PRICING IN THE MULTI-PRODUCT FIRM

During 1954 and 1955 we interviewed the executives of 12 multi-product manufacturing firms in Western Australia, asking questions about the pricing policies of their firms and related matters. From previous enquiries we concluded that many manufacturing firms in Western Australia use the guidance of the full cost principle as a frame of reference for pricing policy.[1] We realised, however, that in most cases the full cost principle was not used simply as a cost plus system. Our chief question in the investigation was this: if, in the multi-product firm, the price for each product is fixed according to the degree of competition in the particular market, does this mean that the full cost principle is not adhered to?

1. *Output and Product Pricing*

We concluded that the twelve firms studied did normally fix the prices of their products with the guidance of the full cost principle. This method of pricing has been criticised on several grounds.[2] In the first place it ignores demand—the buyer's needs and willingness to pay do not necessarily bear any relationship to manufacturing costs. Secondly, it does not take actual and potential competition into account. Finally, in the multi-product firm, it suffers from the inaccuracy of arbitrarily allocated overhead costs. In addition, incremental costs, forecasts of future costs and opportunity costs (alternative uses of productive capacity) should frequently be the controlling factor in pricing decisions. In our sample of twelve firms, however, we found that rigid full cost pricing for each product line was not used but that the principle merely set a frame of reference for the entire output of the firm.

The pricing procedure appeared to be as follows. The firm desired to receive a gross margin (additions or mark-ups added to factory costs) for the whole of the firm's output. The gross margin for each product was then varied above or below the standard gross margin for the whole output, according to the estimate of the price at which the product could be sold, given the price of substitute products on the market. Naturally, the firm preferred to produce those lines which carried the higher gross margin. This did not mean that lines with lower gross margins were necessarily abandoned. For technical reasons, the lower gross margin lines might constitute a large part of the firm's output; or the firm's market for the particular line might be retained in the hope of a higher gross margin in the future.

1. E. H. Jones and A. C. Cook: "Full Cost Pricing in Western Australia". *Economic Record* Vol. XXX No. 59, November, 1954, p. 272.
2. J. Dean: *Managerial Economics.* (New York, 1954.) Chapter 7, Section V, passim.

For instance, a firm producing paints explained that it has five distinct markets. These are shipping paints, industrial paints, building paints sold to building firms, building paints sold through retailers to amateur home painters and government contracts.

The gross margin obtained for shipping paints was said to be a "reasonable" one. Sales are made to order. Some orders are large and require some time to supply. Others are small and for these a stock of basic paint components is kept so that they can be supplied quickly. The cost of containers is usually lower for this type of paint.

The sale of industrial paint is normally by quote. The gross margin allowed in each case is calculated according to the short period supply position of the firm, its stocks of materials, its unused plant capacity and the likely quotes of competitors.

Builders' paints are sold to building contractors by an arrangement of discounts on large orders in addition to regular trade discounts. A different set of discounts prevails for sales to retailers.

Government contracts are tendered for and the gross margin included in each quote is usually lower than the standard gross margin for the whole of the firm's output; such contracts are normally for stipulated periods of time and payment is regarded as being assured. The actual gross margin included in the quote will depend on the likely unused capacity of the plant for the period of the contract. An expected high percentage of unused capacity will mean the quotation of a lower price to try to obtain the contract. In such a case, the incremental cost can be regarded as a price floor and such a cost will be lower than that for business which carries a commitment to continue to supply. An estimated likely low percentage of unused capacity will cause a higher price to be quoted. This would include a gross margin as high as or higher than could be expected from sales resulting from the alternative use of such capacity. It is, in effect, a refusal price.

In spite of the different pricing policy for each of the five distinct markets, the standard gross margin for the firm's total output is the desired overall result. The firm does not normally expect to receive more than this for its total output despite the quotation to obtain the highest gross margin in each of the five markets. A particularly favourable market situation which permitted the standard gross margin on total output to be raised appreciably would be exceptional and short-lived. Other firms would "cut in" at the profitable prices prevailing. Even a relatively short period of gross margin pricing well above the standard figure is seen as being able to injure the firm's goodwill permanently, thus prejudicing its future position. In any case, during periods of capacity or near-capacity output, relatively high profits are earned because the standard gross margin is calculated on standard or average percentage of capacity utilisation; this is, of course, below

the short period full capacity. In periods of production at relatively low percentages of capacity output, lower profits or even losses will be incurred. Under these conditions the standard gross margin may have to be recalculated though it is normally adhered to for long periods.

The attitude of the management of this particular firm seemed to be shared by those of the other firms in our sample, each of which was on a small scale and in a different industry. It demonstrates. we think, that the mind of the entrepreneur is dominated by the thoughts of competition—price competition, non-price competition, and potential competition.

Even when the market is a highly competitive one, the firm still seeks to discover as closely as possible the relationship between costs and prices for each product. In the multi-product firm, however, the accurate determination of costs is particularly difficult as the allocation of overhead costs to individual product lines is arbitrary from the economic or the accounting viewpoint. For instance, one of the firms we studied manufactured refrigerators and was operating in a period of keen competition. The prices of the eight cubic feet and five cubic feet models were virtually fixed by those of rival firms selling refrigerators of similar quality. After a thorough costing check it was found that a higher gross margin was being earned on the five cubic feet model than the eight cubic feet model. This was of some importance to the firm as it had to decide how far it was prepared to go in granting discounts to retailers in order to persuade them to push the sales of this particular model.

This firm was also carefully considering what other products it could manufacture with the plant and labour available in the off-season for refrigerator sales. The manufacture of other products which could be sold with some gross margin would make a contribution towards overhead costs and keep the firm working at a higher percentage of capacity than was possible with the high seasonality of refrigerator production. The social and economic costs of a fluctuating labour force would also be reduced or eliminated.

2. *The Maximisation of Profits*

Some managers told us that their firms did not attempt to maximise profits. As long as the shareholders could be kept contented, the firm's goodwill and market preserved and a reputation for fair dealing built up, the firm's aim would be achieved. Others said that the firm sought to maximise profits but that the policy of charging what the market could bear had to be tempered by considerations of the firm's goodwill, etc. These two points of view appear to be the same, the firm attempts to maximise profits in the long rather than the short period.

We had explanations from some executives of how the firm based its overall pricing calculations. For instance, a firm in the steel fabrication industry gave us an explicit account. The firm decided the amount of net profit required to pay reasonable dividends to the shareholders and to pay certain amounts into reserve accounts. From the estimated sales and output of the next period it then calculated the gross margin which it would have to earn. Output and sales were then broken down by product lines and the price for each calculated on the basis of factory cost per unit plus the standard mark-up needed to achieve the profit aim. These prices could only be varied by reference to top executives but, in special cases, the standard mark-ups could be varied to take advantage of a particularly favourable market situation or to secure large orders. It was not anticipated that the desired net profit level would be exceeded and the procedure was explained to us as the best way to meet competition and still earn "reasonable" profits.

This method may be termed rate-of-return pricing and a detailed description of it was given 30 years ago by Donaldson Brown, then vice-president of General Motors.[3] It is a refinement of full cost pricing in that capacity utilisation is forecast and the gross margin adjusted accordingly, the mark-up being related to the desired rate of return. The planned gross margin is thus a datum line for controlling short run pricing actions and measuring the extent to which they drive earnings away from the rate of return target. It is questionable, however, whether this method would be advisable in periods of fluctuating activity as a small capacity utilisation percentage would raise the gross margin considerably. A gross margin normalised for changes in activity in the long run would perhaps be a better solution.

This method also raises several other problems which are common to any system based on the full cost principle. It is necessary to allocate certain amounts to reserves to make up the difference between accounting and economic depreciation, thereby allowing for the replacement of fixed assets. A similar reserve is often needed to allow for the replacement of raw material stocks. The major problem. we think, is the setting of the standard level of profit after making the provisions mentioned above. This standard may be based on one of several criteria. The first is what Dean[4] has called the "capital-attracting rate of return"—a profit standard formulated in terms of the cost of new capital in the capital markets. The proportion of ordinary share capital to total capital will affect the figure and the question of current costs or long run average costs must also be considered. Secondly, the profit rate needed to finance a desired rate of growth may be used. Finally,

3. Donaldson Brown: "Pricing Policy in Relation to Financial Control", *Management and Administration*, Vo. 7, pp. 195-8, 283-6, 417-22.
4. Dean, *op. cit.*, *p.* 34.

there is the concept of normal earnings based on past figures. This may be quite logical if past levels have attracted sufficient capital when required, kept the shareholders contented and yet not invited too much competition.

Generally speaking, the entrepreneurs in our sample aimed at earning a standard gross margin rather than maximising the current rate of profit. Their stated aim was, however, clearly to maximise profit in the long run. This was founded largely on the assumption that charging what the market will bear at the time will encourage competition in what is actually a weak monopoly situation. But there are other possible reasons. First, there may be the realisation that profit levels are taken into account by industrial tribunals when wage claims are being considered. High profits could therefore mean higher wages which would be much stickier than prices when the market situation called for a downward revision. Secondly, there is the divorce of ownership from management which may make the "desire for a quiet life", the maximisation of management incomes and the continuance of the firm as an organisation more important than company earnings above a certain arbitrary figure. This may be conveniently rationalised as long run profit maximisation.[5] Indeed, there may be a case for regarding the firm as Ross regards the trade union, as a political institution in an economic environment, though this would hardly be applicable in the small firms such as those which constituted our sample. There is also the possibility that the notion of the "just price" and the desire of the entrepreneur to be regarded as an enlightened, decent citizen rather than a "profiteer" both play their part in limiting profits.[6] Despite all this, however, our conclusion as to whether firms do or do not try to maximise profits is to agree with Mrs. Joan Robinson: "Meanwhile I am inclined to retort to those who grouse about the assumption that the entrepreneur's aim is to maximise profits in the immortal words of Old Bill: 'If you know a better 'ole, go to it'."[7]

3. *The Implications*

The simplifying assumption of a single product firm is quite a justifiable one in text book analysis but we need to study the implications of a relaxation of that assumption.

We asked ourselves whether the multi-product firm does fix the price of each product at the point where short period marginal cost

5. M. W. Reder: "A Reconsideration of the Marginal Productivity Theory", *Journal of Political Economy*, Vol. 55, No. 5, October, 1947. W. W. Cooper: "Revisions to the Theory of the Firm", *American Economic Review*, Dec. 1949.

6. R. F. Harrod: "Price and Cost in Entrepreneurs' Policy", *Oxford Economic Papers*, No. 2, May, 1939. E. G. Nourse: *Price Making in a Democracy* (Washington, 1944), p. 100.

7. J. Robinson: "Imperfect Competition Revisited", *Economic Journal*, September, 1953, pp. 582-3.

is equal to short period marginal revenue as in the Mrs. Robinson-Chamberlin text book analysis. The quoting of a price for each product is on the basis of a partly subjective demand schedule in the mind of the price fixer; to this extent, short period marginal revenue appears to be a relevant consideration. We find it difficult to believe, however, that short period marginal cost is even an unconscious element in price fixing considerations except in some instances, such as the decision to employ unused capacity by manufacturing a new product.

If, however, the firm is attempting to maximise profits in the short period, then it must attempt to equate short period marginal cost and revenue. We concluded that, in our sample, short run profit maximisation is tempered by the desire to retain and increase goodwill. To maximise long period profits the firm must equate long period marginal cost and revenue. In circumstances of changing technology these two concepts are shadowy, nor can the proposition be proved formally.

When considering the multi-product firm we can use the concepts of a "weighted average price" for the total output .The addition of new products to the range will change this price. From the viewpoint of the firm we can think of changes in its marginal revenue. But from the viewpoint of the market supply position the increased output is that of another commodity which leaves the supply price of other products unaffected. It is therefore difficult to visualise the marginal revenue of the multi-product firm in the same sense as that of the single product firm. This difficulty may not be great when the firm produces for only one market but many multi-product firms produce for more than one market. We do not claim that our investigation invalidates the conclusions of marginal analysis. We also realise that it is dangerous to base any generalisation on our sample of 12 firms. However, even such a small sample was sufficient to give us a significant insight into the complexities of markets and technologies in real firms and to impress us with the difficulties of generalisations.

With great humility, therefore, we plead that our text book analysis should be supplemented with some empirical detail.

A. C. Cook
N. F. Dufty
E. H. Jones

University of Western Australia.
Perth Technical College.
Perth Technical College.

PRODUCTIVITY AND SIZE OF ESTABLISHMENT IN NEW ZEALAND DISTRIBUTIVE TRADES, 1953[1]

It is widely accepted that distributive trades enjoy increasing returns[2] and, in Colin Clark's view, "the economies of large-scale retailing are more marked than they are in manufacturing".[3] In this note we propose to test this proposition with statistics of the first New Zealand census of distribution taken in 1953[4]. Although labour productivity is not the only factor influencing economies of scale, it is likely, in retailing and wholesaling, to be the most important. Furthermore the census data do not permit an examination of the relationship between size of shop and productivity of capital.

In manufacturing, labour productivity is commonly measured by either value of output or added value per person, or by the ratio of labour costs to added value.[5] These are generally the best practicable measures although they are far from ideal.[6] Similar indicators of labour productivity may be used for the distributive trades by replacing value of output by turnover and by taking sales less purchases as an approximation to added value. These measures may, however, be misleading if stock variations are substantial. Moreover, labour rewards must be imputed to proprietors and their families because many New Zealand shops (especially small ones) are staffed by persons who do not receive salaries or wages.[7] To do this we make the simple but rather doubtful assumption that they receive the same average labour reward as paid employees.

It is natural to think of shop size in terms of turnover or of number of persons engaged, but the New Zealand statistics classify shops by turnover and number of paid employees. Neither of these is completely satisfactory. As Johnson[8] has shown, grouping by turnover alone may give rise to the appearance of increasing labour productivity when none exists. Again grading for size by number of paid employees is clearly not ideal but, even if it were possible to grade by persons engaged, some adjustment would be necessary to allow for part-time

1. All the statistics used in this note are derived from the New Zealand Census of Distribution, 1953.
2. Lady Hall and J. Knapp, *Economic Journal*, Vol. LXV, No. 257, p. 77.
3. Colin Clark, *The Conditions of Economic Progress*, p. 344.
4. The period covered by the census was the year ended 31st March, 1953. According to the census authorities an attempt was made to cover all retail and wholesale stores and they estimated that 95 per cent of all stores coming within the inquiry were actually reached and that these stores had over 97 per cent of the total turnover.
5. J. Johnson, *Bulletin of the Oxford University Institute of Statistics*, Vol. 16, Nos. 11 and 12; A. J. Brown, *Applied Economics*, ch. V.
6. For an account of some objections to these measures, see Lady Hall and J. Knapp, *op. cit.* p. 76.
7. There were 91·6 thousand persons engaged in retail distribution in 1953, of whom only 75·8 thousand were paid employees.
8. J. Johnson, *op. cit.*

work on the part of proprietors and their families. In what follows we use all of the measures of productivity and size which are practicable in order to lessen the chance of obtaining spurious results.

The variation of labour productivity with turnover for all New Zealand retail shops is shown in Table I and by the Figure. The various measures agree with one another quite closely and in particular the agreement between turnover and added value is so close that, when we are forced to use turnover only, we may do so with some confidence. All three indicators show that shops with a turnover between £300,000-£400,000 have the highest labour productivity. Small shops have very

FIGURE—LABOUR PRODUCTIVITY AND RETAIL SHOP SIZE

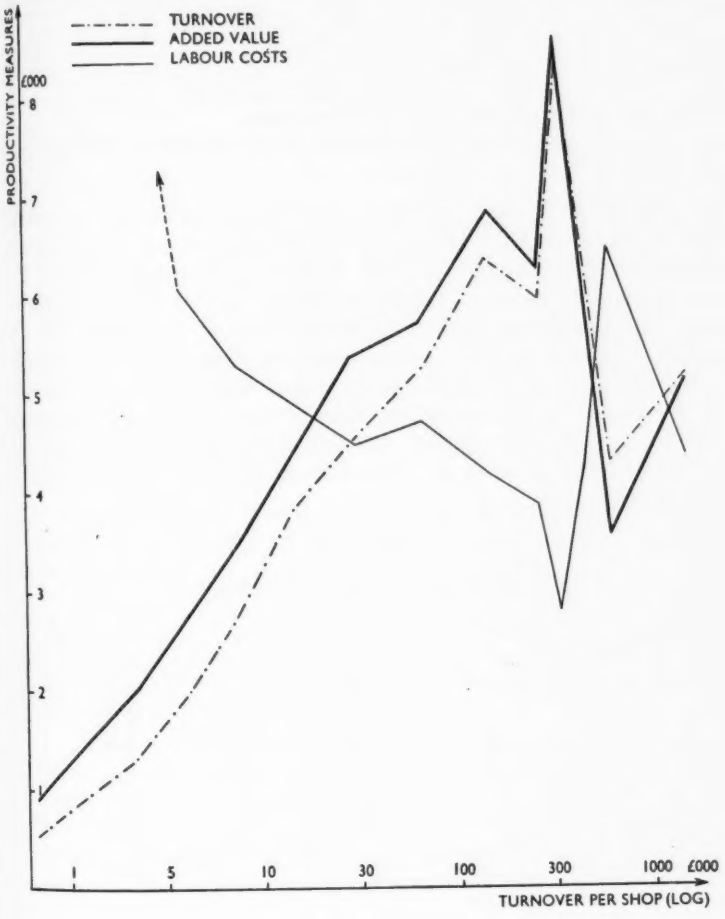


TABLE I

All New Zealand Retail Trades, 1953

Size of Shop by Turnover £000	Number of shops	Turnover per person £000	Added Value per person (1) £000	Labour Costs Added Value p.c.	Gross margin (2) p.c.
Under 1	492	0·50	0·18	133·5	30·6
1 to 3	2,321	1·29	0·40	99·0	28·0
3 to 5	2,807	1·95	0·55	60·4	26·9
5 to 10	6,056	2·74	0·70	52·8	24·3
10 to 20	5,736	3·80	0·88	49·7	22·2
20 to 50	2,897	4·57	1·08	44·8	22·6
50 to 100	711	5·25	1·15	47·7	20·2
100 to 250	381	6·42	1·38	42·1	18·9
250 to 300	23	6·02	1·25	39·1	15·4
300 to 400	35	8·38	1·73	28·1	16·3
400 to 500	19	6·65	1·24	42·7	15·8
500 to 750	25	4·31	0·72	65·5	11·6
Over 750	20	5·24	1·03	43·4	16·8
All shops	21,523	4·15	1·94	38·8	20·8

NOTES: (1) Added value = turnover minus purchases.

(2) Gross margin = turnover minus purchases divided by turnover—see later.

low outputs per person and these are of course, the most numerous. Had all shops achieved the highest labour productivity, retail distribution would require only half the labour at present employed.

Classifying shops by number of paid employees instead of turnover gives a much smaller range of turnover per person (Table II). In this case, however, we have only a sample of all shops and the sample is biassed in favour of smaller shops. Shops with the highest productivity are still very large by New Zealand standards. It is, unfortunately, not possible to calculate other measures in order to check the results of using turnover per person by itself as the index of labour productivity.

TABLE II

Some New Zealand Retail Trades, 1953

Size of shop by number of paid employees	Number of Shops	Turnover per person £000
0	5,015	3·60
1	3,546	3·80
2	2,920	3·91
3	1,867	4·00
4–5	1,786	4·00
6–7	819	4·05
8–9	403	3·98
10–19	628	4·15
Over 20	322	3·85
Totals	17,306	3·91

TABLE III

Some New Zealand Retail Trades, 1953

Shop Group	Number of Shops	Turnover per person in £000 according to size of Shop									
		Number of paid employees per shop									All shops
		0	1	2	3	4–5	6–7	8–9	10–19	over 20	
Baker, etc.	871	1·77	1·63	*1·60	1·63	1·79	†1·97	1·58	1·53	1·81	1·67
Butcher, etc.	1,361	4·43	4·33	*4·00	4·05	4·07	3·97	4·33	4·70	†4.83	4·19
Confectioner	394	*2·30	†2·58	2·78	1·85	1·59	0·95	0·84	0·78	—	1·96
Dairy, milk bar, etc...	1,095	†3·05	*2·78	2·62	2·30	2·07	1·54	1·50	1·14	1·01	2·35
Fruiterer, etc. ..	947	*3·26	3·34	3·20	3·31	3·61	5·55	6·30	†7·33	—	3·61
Grocer .. :	3,328	4·44	*4·90	†5·23	5·09	5·07	4·94	4·68	4·65	5·00	4·90
Hotel	987	3·62	4·16	4·05	*4·33	4·13	†4·40	4·20	3·61	3·20	3·89
Boots and Shoes ..	539	2·97	3·64	*3·92	†4·06	3·58	3·81	3·88	3·62	—	3·69
Draper, etc.	2,048	2·66	2 95·	*3·25	2·71	3·67	3·62	3·42	†4·00	3·27	3·40
Mens' Clothiers ..	459	4·92	6·37	*6·18	6·43	6·03	5·53	5 53·	†6·51	—	6·05
Furniture	508	4·57	3·91	4·53	*4·99	†5·13	4·71	4·92	4·14	4·14	4·39
Household Appliances	450	3·65	3·70	4·04	*3·48	4·07	3·02	†4·24	4·22	4·10	3·93
Hardware	359	4·79	5·08	5·26	*5·70	6·13	†6·69	5·34	6·03	5·52	5·72
Chemist	650	†4·10	3·45	*3·13	3·02	2·89	2·66	2·85	2·45	—	2·97
Bookseller, etc. ..	748	2·76	*2·90	2·97	3·32	3·27	3·06	†3·53	3·52	2·76	3·03
General and Department ..	1,206	4·56	5·16	5·43	*5·72	5·99	6·07	†6·15	5·56	4·03	4·54
Jeweller	429	2·41	2·85	*2·86	2·93	3·20	3·13	3·41	†3·50	—	2·97
Tobacconist	927	*3·50	3·31	3·62	3·22	3·41	†3·77	—	—	—	3·44
Totals	17,306	3·60	3·80	*3·91	4·00	4·00	4·05	3·98	†4·15	3·85	3·91

NOTES: * Medium-sized shop.
† Maximum productivity shop.

In Table III the sample used in Table II is broken up according to the kind of product sold. Our earlier impression that most New Zealand retail shops are too small to achieve maximum economy in the use of labour is at once confirmed by comparing the medium-sized shop with the shop of maximum productivity in each group. Only chemists' shops and dairies, milk-bars, etc., are larger than the optimum. In all other cases substantially greater productivity of labour is shown by the larger-than-average shop.

The data available on wholesale distribution permits the calculation of only one measure of productivity—turnover per person and the variation of this with size of establishment is shown in Table IV. Productivity increases steadily with size from the smallest to the largest establishment and the difference in productivity between them is very great.

TABLE IV

All New Zealand Wholesale Establishments, 1953

Size of Establishment (turnover) £'00	*Number of Establishments*	*Turnover per Person* £'00
Under 5	216	1·15
5 to 10	228	2·09
10 to 20	311	3·14
20 to 50	541	4·88
50 to 100	417	7·24
100 to 250	362	9·38
250 to 500	195	9·52
over 500	133	12·45
Totals	2,403	9·01

It seems clear from our results that distribution in New Zealand is subject to increasing returns at least so far as labour productivity is a satisfactory indicator of economies of scale. One way of checking its adequacy is to compare variation of gross margins and labour productivity with size of shop. Gross margins[9] are the ratio of sales less purchases to sales, and they reflect the influence of all factors on turnover. Referring back to Table I we see that, on the whole, the agreement is fairly close. The most striking disagreement is shown by gross margins reaching a minimum in the £500,000-£750,000 turnover group, which suggests that substantial economies in the use of capital may be realised by very large shops. It is, unfortunately, not possible to verify this directly.

J. W. ROWE

Victoria University College.

THE DEFINITION OF ECONOMICS

In an article in the November 1955 issue of the *Economic Record*, Dr. Kenneth Rivett re-opened the subject of definition. He pointed to what he took to be some deficiencies in the definition advanced by Lionel Robbins, and he proposed an amended definition to replace it. In the course of his article Dr. Rivett said many things that were both sensible and valuable, but there are still perhaps some grounds for holding reservations about his definition and even about his approach. Whether disputes about definition can ever be settled is itself a matter for some scepticism. Apart from the fact that different definitions to some extent lay down different programmes for economics, it is likely that one's views on definition are closely bound up with one's views on specific parts of economic analysis—including the meaning and status of welfare economics and of the theory of demand

9. S. Pollard and J. O. Hughes, *Oxford Economic Papers*, Vol. 7, No. 1; James B. Jeffery, *The Distribution of Consumer Goods*, p. 406.

in general—and for this reason it is difficult to find common ground in the discussion of the more general and abstract issue. However, although it may be impossible to advance compelling reasons why one definition must be accepted and another rejected, it is possible to draw attention to special features of particular definitions and to the special assumptions on which they are based.

I

At one point in his chain of argument Dr. Rivett concludes that it is desirable that the professed scope of economics should correspond to the area within which the distinctive method of economics is used.[1] His reason is that the method of economics is unique in the social sciences; it therefore presumably provides one method of distinguishing economics from other subjects. Nevertheless, Dr. Rivett's rule is quite an arbitrary one. It is easy to conceive that the *distinctive* method of economics might be inapplicable to some problems falling within the scope of economics, and that the economist might seek to employ methods that have been developed in some other subjects. There seems to be no reason why he should be debarred from doing so, or should be restricted to the investigation of those problems that can be handled with the techniques that are peculiar to his subject. But this is what Dr. Rivett's ruling seems to imply.

This emphasis on method, and the attempt to find in the methods employed the feature distinguishing one science from another, are intelligible if we view them as an expression of a particular approach to the problems of definition. This approach is to try to define the activity carried on by the students of the science. Adoption of this approach immediately focusses attention on the methods employed. At the same time it limits one's view of the subject pretty completely to the ground that has already been covered and to the methods that have already been developed and employed.

There are doubtless a good many precedents for proceeding in this way. But there remains an alternative approach, not obviously inferior on formal grounds. This is to attempt to identify, not the activities of economists, but the nature of the subject-matter which they are studying. If one proceeds in this fashion, it immediately becomes possible to recognize that some parts of this subject-matter may have been neglected or may have been explored less thoroughly than other parts, and that new or different methods and techniques may be required in order to cover the ground more completely.

It is perhaps not easy to see what arguments could be advanced to support one approach at the expense of the other. But their differences ought to be recognized. And there seems to be no good reason

1. *Economic Record*, Volume XXXI, No. 61, p. 221.

why the second of them should not be developed and applied as rigorously as possible.

II

It is to be remarked that in his definition Dr. Rivett retains the reference to means and ends that was to be found in Robbins' definition. This means-end formula has found fairly general acceptance in the literature of economics over the last twenty years. But it may be asked whether it really is a very useful or informative expression in relation to the definition of economics and its subject-matter.

In the discussion preceding the statement of his own definition,[2] Dr. Rivett makes it clear that he regards economics as concerned with certain aspects or forms of the acquisition and allocation of goods and services, and this is apparently what he means to convey by the phrase "relations between means and ends". This is, however, an extremely obscure statement of the concept he wishes to express. The point is, of course, that economists have felt that the need for allocation could arise only when there is some scarcity of means in relation to (actual or potential) ends or uses. This need not be disputed. But that does not mean that we have to describe allocation as a relation between means and ends. The connection between allocation and scarcity is a separate fact, which can be dealt with in its place, and it only confuses the issue to substitute one term for the other in the definition of economics.

Why then have so many economists been attracted by the means-end formula? I believe that the answer to this question is largely that the formula has seemed to offer a way of escape from the sort of difficulty which has driven Dr. Rivett to make some explicit reference to prices in his definition.

Attempts have been made in the past to define economics as the study of production and distribution (which is quite close to what Dr. Rivett means by acquisition and allocation). The recurrent difficulty with this kind of definition has been that production and to some extent distribution are very much the concern of a host of other subjects including engineering and other studies based on the physical sciences.[3] In consequence, there have been repeated attempts to find some way of defining economics that distinguishes it clearly from "technology". As Dr. Rivett points out, Robbins and other members of his school seized on the means-end formula in an effort to find something that marked economics off clearly from technology. In doing so, however, they adopted one particular method of approaching their goal. They proceeded to identify what they took to be one element in

2. *Op. cit.*, pp. 228-229.

3. A classic statement of this difficulty is given in J. S. Mill's famous essay "On the Definition of Political Economy". See *Essays on Some Unsettled Questions of Political Economy* (published as No. 7 in the London School of Economics' Series of Reprints of Scarce Works on Political Economy), pp. 127-133.

the technologist's *approach* to his work, the fact that he is supposed to be solving a definite problem. Once they had done this to their satisfaction, they went on to try to establish a contrast with economics, by arguing either that economists are not trying to solve a problem at all (merely studying certain relations) or that the problem with which economists are concerned is of a fundamentally different kind.[4]

Theirs, however, was only one way of looking for the difference between the field of the economist and that of the technologist. It is also possible to ask whether the technologist and the economist study different aspects of production and distribution. The answer to this question appears to be affirmative. The technologist or engineer appears to be studying the physical and chemical aspects of production and distribution, whereas the economist is studying the functioning of the social institutions through which production and distribution are determined. Once that distinction has been made, the fundamental problem in defining the field of economics in terms of production and distribution has been solved. When it is made clear that economics deals primarily with the social aspects of production and distribution its subject-matter seems to be located with sufficient precision. There is no need to look for any other distinction between the work of the technologist and that of the economist on which to found a definition of economics.[5] However, a definition along these lines would fail to satisfy one of the criteria stated by Dr. Rivett. A number of popular uses of "economy" and "economic" (or "economical") would appear to be not at all closely related to the meaning of "economics". But there seems to be no good reason to place any great weight on verbal considerations of this kind.

III

Dr. Rivett sees some difficulty in distinguishing economics not only from technology but also from the study of administration, unless some explicit reference is made to the price mechanism. I would suggest that again the problem can be handled in another way.

It is desirable to guard against one possible misconception at the beginning. It is not incompatible with the formal requirements of

4. Probably most economists who adopt this approach would favour the latter of these alternatives. But it is one of the drawbacks of the "means-end" formula that it is quite ambiguous on this point. Robbins' definition seems to be open to either interpretation.

5. This is quite close to the solution offered by Mill in the essay referred to above. But, characteristically, after pointing to a distinction between the "physical" and other aspects of production, Mill proceeds to speak not of social institutions but of the "laws of human nature" (*op. cit.*, p. 133); as a result he is forced finally to limit the subject-matter of economics to those situations "in which the acquisition of wealth is the main and acknowledged end" (p. 139). It will be observed that this limitation (the implications of which are carefully traced by Mill and which is also involved in the definition of Talcott Parsons quoted by Dr. Rivett) is no longer implied when we speak of the "functioning of social institutions through which production and distribution are determined".

definition that the same material should fall within the scope of more than one science. Within the physical sciences, or so it appears to the layman, this is very common: for example, atomic physicists and astronomers, geologists and chemists will often be using the same techniques and employing or verifying the same hypotheses although they are working in recognizably different fields. Nor is it revolutionary to suggest that the social sciences might be related in the same way. The recognition that students of different disciplines were working over the same or related material lay behind the movement for "co-operation in the social sciences" of which we heard a good deal some years ago. In practice economists have always recognized that their inquiries could not remain independent of those pursued in other studies: among other examples, the common interest of economists and psychologists in some problems of individual psychology has long been admitted, and economists have tried to cast data derived from engineering studies into "production functions" that might be manipulated in purely economic theories. It follows that no particular significance attaches to the fact that economics and the study of administration might be concerned in part with the same material, or that one of them might need to draw on conclusions formed by the other. These relationships and forms of inter-dependence would not imply that there is no distinction between the two subjects.

The possibility of confusion between the subjects is at once reduced when we cease to define economics in terms of some relation between means and ends. The objection raised above to that kind of definition was indeed that it is extremely vague and obscure; it might mean almost anything. Certainly, administrative activity, like any other activity, can be viewed as the use of means to achieve ends, and as Dr. Rivett has shown, it is not so easy to distinguish different sorts of relations between means and ends as has often been supposed. But this sort of difficulty will not arise when economics is defined in a radically different way.

It will still appear, however, that economics and the study of administration will impinge on each other at a number of points.

In the first place, "administration" plays a large part in the operation of many ordinary economic enterprises, and there and elsewhere is responsible for the production of a substantial volume of services. The characteristic features of administrative activity may have some effect on the operations of enterprises and on the functioning of the economy as a whole. In the second place the administrator and the administrative organisation will acquire control of and deploy human and other resources (a notion, be it noted, which is rather different from, and more precise than, the view of the administrator as using means to achieve ends). The economist will therefore find it

useful to learn what is known about the ways in which administrative organisations operate, about their characteristic ways of behaving, although he must himself assess the importance and relevance of these facts for the field in which he works: for example, the tendency in any large organisation to create hierarchical structures of responsibility and authority, and to stratify and pay employees according to some objective qualities of the posts they occupy, even though this may result very largely in the neglect of considerations of marginal productivity at many points. At the same time, the economist's general knowledge of the functioning of economic systems will enable him to contribute to an understanding of the terms on which, in any given kind of economy, the administrator might hope to secure and use resources.

Thus there might be a twofold movement of ideas and hypotheses, one from the study of administration to economics, the other in the opposite direction. But the two disciplines would contiuue to use these hypotheses in their own ways and for their own purposes. Although administrative organisations are among the institutions through which production and distribution are determined and in which resources are used and allocated, the study of administration is not a branch of economics. The control and allocation of resources is involved only incidentally in administrative activity. The economist will be very much mistaken if he assumes that administration (or diplomacy!) can be adequately described, understood or analysed as a process of allocating resources. For this reason administration must be conceded the status of an independent field of investigation.

L. J. Hume

Canberra.

REJOINDER

Certain propositions are widely regarded as comprising either the whole or the greater part of modern economics. It happens that they have mostly been obtained by a distinctive method. This would seem to create a presumption that economics should be defined by reference to the area within which its method is used. One can agree, however, that for adequate reasons this presumption could be overruled.

Mr. Hume, in his thoughtful Comment, suggests a possible reason of this kind. He says that my approach to problems of definition seems to imply that the economist "should be restricted to the investigation of those problems that can be handled with the techniques that are peculiar to his subject". I did not, however, imply this at all. Deliberately, I implied the very opposite when I said, at the start of my article, that "to define a science is to define the *special* interests of the people concerned with it". I went on to say that it was desirable to

define economics so as to include all the material "with which economists are *specially* concerned".[1] (Italics added in both cases.) Most of us believe that the occupational group known as economists should, indeed must, concern themselves with problems that reach beyond the boundaries of their science. Practical issues repeatedly raise questions extending across the borders of any one discipline; and it can be undesirable and even misleading to discuss their economic aspects without commenting on other aspects. Even theoretical problems, such as we face now in the theory of the firm, can sometimes only be solved with the help of other sciences. Economics is *not* the sum total of what economists say in working hours, nor of what they ought to say. It is a body of propositions specially related to each other and to certain problems. A definition based on the nature and derivation of these propositions will reflect the distinctive interests of economists, not the whole of their interests.

I agree with Mr. Hume that the same fact can appear in the propositions of more than one science. This follows from the consideration that science is concerned with relationships and not with the mere description of phenomena. I also agree that the various classes of physical scientist borrow freely from each other's disciplines. But the greater the co-operation between persons trained in different fields, the more convenient it becomes to assign all science to one field or another. We may not always succeed in doing so, but the nearer we get, the better.

If these views are sound—and they are certainly not new—then Mr. Hume's case against my version of Robbins's definition falls to the ground. Undoubtedly economics and administrative science are interested in the same facts. Undoubtedly economists can make good use of administrative generalisations. The more they do so, however—and the more some of them urge their students to do so—the more they will feel the need for a definition that separates economics from administrative science. A simple and obvious change in Robbins's formula provides us with what we want. We get a definition which treats economics as concerned with certain relations between (a) ends and scarce means and (b) behaviour—the relations being those usually mediated by price.

In the light of such a definition, the aims of economic agents (including organisations), their access to knowledge and the use they make of it are seen as important *facts* in which economists will be interested. These facts, moreover, will often appear in the propositions of our science. Not only facts but also generalisations concerning, e.g. the extent to which a large organisation can act rationally may be useful to economists. These generalisations, however, need not become

1. *Economic Record,* November 1955, p. 215.

a part of economics. We can use some of the theories of administrative scientists without obliterating the useful distinction between our science and theirs. A distinction is needed, partly because economics uses a different method and partly because the propositions of administrative science have independent value. The laws of chemistry are taken into account in geology, but the two sciences are distinct and it has never been suggested that this is other than desirable.

Mr. Hume defines economics as concerned with the "functioning of social institutions through which production and distribution are determined". It is true, as he says, that administrative science involves more than this. No one, as he points out, is likely to regard it as just a branch of economics. But even if he has a first class definition of administrative science up his sleeve, the way he defines economics involves a terrific overlap between the two disciplines. The relationship of economics to sociology and to political science is likewise left in an unsatisfactory state.

Two points in conclusion: Mr. Hume remarks that I regard economics "as concerned with certain aspects or forms of the acquisition and allocation of goods and services". He then objects that there is no need to describe allocation in terms of relationship. Agreed: but acquisition is also involved. Economics is not merely interested in how consumers and producers come to lay out their money. It also studies the way in which these allocations affect the distribution of wealth. I stick to the concept of relationship because no one has yet found a simpler way of describing the type of connection between allocation and acquisition that concerns economics.

Secondly, Mr. Hume thinks it unimportant whether the definition of economics is closely related to the popular meaning of "economic" and similar words. In the case of "economic", however, we badly need an exact definition for use in high level discussion. Enormously important questions, like the extent to which a conquering nation can use physical force to further its economic aims at the expense of a conquered people, are bound to be misconceived unless stated exactly—witness the discussion of Sir Norman Angell's *Great Illusion*. Such problems cannot be formulated accurately unless the key words involved are given precise meanings. In defining "economic", there is clearly a presumption against departing too far from popular usage. There is also a presumption in favour of so defining it that the "economic" aspect of a problem will be one to which economics is plainly and peculiarly relevant. To that end a definition of "economic" should be as closely related as possible to the definition of economics. This consideration would seem so important that it may well be borne in mind when defining our science.

KENNETH RIVETT

University of Melbourne.

NEWS AND NOTES

Professor J. A. La Nauze has resigned from our Editorial Board on the occasion of his migration from the Chair of Economic History to the Ernest Scott Chair of History in the University of Melbourne. Professor La Nauze served on the Editorial Board for seven years. In addition to the ordinary duties that this entailed, he acted as Review Editor during the last two years. He brought to this delicate task not only his wide scholarship but also his unfailing sympathy and quick understanding of other people's feelings and points of view.

The Editor regrets his resignation and wishes him well in his new field, in which we know he has a distinguished contribution to make.

Professor La Nauze has been succeeded as Review Editor by Mr. F. G. Davidson.

The International Conference of Agricultural Economists is currently seeking increased Australian participation in its activities. Membership is invited from interested persons or organisations in this country. The Subscription for the ensuing three-year period until the 1958 Conference is £A2/10/-. Members receive a copy of the Proceedings of the 1955 Helsinki Conference, current issues of the *Journal of Agrarian Affairs*, and other periodical publications. Intending members should forward their subscription to Dr. K. O. Campbell, I.C.A.E. Correspondent for Australia, School of Agriculture, University of Sydney, Sydney, from whom further details of the association may also be obtained.

The Thirty-second Meeting of the Australian and New Zealand Association for the Advancement of Science is to be held in Dunedin from the 16th to the 23rd January, 1957. The local committee of Section G (Economics, Statistics, and Social Science) is arranging a programme in consultation with the section president, Professor T. W. Swan, of the Australian National University, Canberra. The programme is to include symposia and individual papers of interest to specialists in these fields and also papers which should appeal to a wider audience. Enquiries and offers of papers should be addressed to the honorary local secretary of Section G (Mr. K. A. Blakey, University of Otago, P.O. Box 56, Dunedin, N.Z.).

List of Branch Secretaries

Victoria: D. M. Hocking, Department of Economics, University of Melbourne, Carlton, Vic.

New South Wales: R. D. Clark, Box 1598, G.P.O., Sydney, N.S.W.

Western Australia: W. R. Rogers, 25 Hobbs Avenue, Dalkeith, W.A.

South Australia: J. G. Medwell, Dept. of Economics, University of Adelaide, S.A.

Tasmania: D. E. Kirby, Box 665E, G.P.O., Hobart, Tas.

Queensland: Mr. G. Price, Department of External Studies, University of Queensland, St. Lucia, S.W.6, Brisbane, Qld.

Canberra: Dr. A. R. Hall, Australian National University, Canberra, A.C.T.

Wellington: I. F. E. Wilson, 328 Lambton Quay, Wellington, N.Z.

Christchurch: W. Rosenberg, Canterbury University College, Christchurch, N.Z.

Dunedin: A. D. L. Lamont, 16 Asquith Street, Dunedin, S.W.1, N.Z.

Auckland: A. R. Bergstrom, Economics Department, University College, P.O. Box 2553, Auckland, N.Z.

REVIEWS

The Peaks of Lyell. By GEOFFREY BLAINEY. (Melbourne University Press, 1954). Pp. x + 310. 30/- Aust.

Mr. Blainey's excellent history of the Mt. Lyell Mining and Railway Company is a proud memorial to a great Australian copper mining company, the first major company in Australia to commission a professional historian and make all its records available to him. Mining has been the sole industry of the west coast of Tasmania, and the Mt. Lyell Company, since its formation in 1892, has been the dominant company in this mountainous, inaccessible region. *The Peaks of Lyell* is also the standard history of the west coast of Tasmania.

The west coast was opened up by the prospectors. Their discoveries of Bischoff (1871), Heemskirk (1877), Zeehan (1882), Lyell (1884), are graphically described by Mr. Blainey. Investors followed the prospectors. The Mt. Lyell mine, abandoned in July 1890 for want of capital, was purchased by Bowes Kelly and William Orr on behalf of a Broken Hill syndicate. In January 1892, the Mt. Lyell Company was formed in Melbourne and smelting at Lyell started four years later. The success of the mine initiated a great speculative boom in west coast mining; companies were formed and fought for leases, railways were projected (and some built), mining experts imported, and the British investor was competently and imaginatively exploited. (Didn't he learn *anything* from his Westralian experience?) This period of conflict and speculation, typical of successful new fields, ended in 1903 with the merger of the North Lyell and Mt. Lyell Companies. Henceforth Mt. Lyell Company supremacy was assured.

With the merger, the focus of west coast history shifts from personalities—the prospectors, miners, financiers, mining engineers—to the Company itself. But the people themselves, whose fortunes were now tied to those of the Company, are still Mr. Blainey's main interest. In describing them, he has written superb social history, the best we have for any region of Australia. Apart from his thorough and skilful use of sources and considerable literary ability, the important point is, I think, his great sympathy towards the people he describes, his ability to share their emotions and thoughts. This is essential if the historian is to bring the past to life, as Mr. Blainey has done.

In recent decades, the excitement of pioneer days has been replaced by systematic large-scale mining. Competent and imaginative senior management, the key to the success of the Company in its early years, is shown to be of continued importance, but the personalities are submerged in the anonymity of joint decisions. The bold 1945 decision to

re-mechanise the open-cut with expensive heavy equipment, a decision which has probably saved the Company from extinction, is in the best traditions of Bowes Kelly. For the recent period, the economic historian would like more on the economics and technology of the Company—the economics of open-cut metal mining, effects of price and cost changes, co-ordination of Melbourne and Queenstown management. He would also like more elaborate general remarks on the role of mining in the Tasmanian economy and the nature of mining as an economic activity. But Mr. Blainey, writing "for popular rather academic tastes", cannot please everyone. He has surely achieved enough in writing history which is both scholarly and interesting. And this reviewer agrees with him that narrative history should not be clogged with ready-made generalizations for the professional historian.

Let us conclude with two such generalizations. West coast mining emerges from the study as an important stabiliser in the Tasmanian economy. The Bischoff and Heemskirk discoveries pulled Tasmania out of the long stagnation from 1860, and the 1897 boom was similarly opportune. Two important features of Tasmanian economic history, staff welfare schemes and the use of hydro-electric power, originated with Mt. Lyell Company. Secondly, the peculiar nature of mining as an economic activity is well shown in *The Peaks of Lyell*. Like the Klondike and New Zealand west coast, and unlike Victoria and California, the west coast mining did not generate other forms of economic activity in the immediate neighbourhood. It is this unfavourable environment which gives a grand simplicity to Mr. Blainey's story. All mines must eventually die; the inexorable cycle of prosperity and decline is fondly chronicled for Penghana, Crotty, Zeehan, and other ghost towns. Perhaps Queenstown too will decay and leave the old prospectors to their memories?

> . . . it is within the bounds of reason that Queenstown might become a sleepy village haunted with old fossickers and pensioners before the century closes. And the visitor from Melbourne might walk up the overgrown railway track and, standing on the broken arches of the Empire Hotel, within the sound of the soft rippling of the river, might watch the shadows move across the black dump of slag and the ruins of the smelters, and see the evening sunlight gleaming on the mountain of mullock that surrounds the worked-out mine.

But our author almost reluctantly points out that the Mt. Lyell mine has an assured life for the indefinite future. This book establishes Mr. Blainey as a first-class historian; a history of Australian mining from his hands could well be a classic work.

J. McCarty

Peterhouse, Cambridge.

Elizabethan Copper: The History of the Company of Mines Royal, 1568-1605. By M. B. DONALD. (Pergamon Press, London, 1955.) Pp. vii + 405. 60/- stg.

In the last generation, as a result of the work of Nef, Lipson, Hamilton and other scholars, the rapid industrial development of Elizabethan England has become a familiar conception. In a number of old industries new and larger-scale methods were introduced; and industries hitherto unknown were set up. These developments are not fully explained by any general theory of growth or innovation which does not take policy into account, for some of the most important were fostered and in various ways subsidized by the state (i.e. by Cecil) with an eye to self-sufficiency in armaments. Thus copper and calamine were essential for the manufacture of brass, and cannon were made of brass. In this useful book Professor Donald tells the story of the Company of Mines Royal which was given special privileges to mine and smelt copper. (Its sister company, the Mineral and Battery Works, was concerned with the manufacture of brass). The Mines Royal was financed partly from Germany, partly in England. It drew on the technical mining knowledge of the Germans, and imported large numbers of German miners, as well as the celebrated expert Daniel Hochstetter, to the remote beauty of the Cumberland lakes to produce the first copper smelted on any appreciable scale in England.

Professor Donald treats in great detail the story of the technical success and the indifferent business achievement of the company. He provides much new material on the legal aspects of its Letters Patent, which affected the future law relating to monopolies; on the biographies of those associated with it; on technical methods; on production and methods of accounting; and on the subsidiary venture in Cornwall. Yet it is "material" rather than history. He has chosen, perhaps wisely, to print his documents at length, and to intersperse them with commentary, rather than to weave them into a narrative mainly in his own words. He sticks very strictly to his Company and its affairs. He makes no attempt to relate its development to that of mining, or of the Elizabethan economy, in general. Yet the book is full of matter to interest the economic historian who cares to dig it out. There is, for example, ample and repeated confirmation of Nef's views about the increasing problem set to industrial enterprises by the high cost of wood for fuel; and even a statistician could grow enthusiastic at the data on wages and prices.

An historian without technical knowledge could not have written this book. The author, a professor of chemical engineering, has sought his documents with scholarly thoroughness and studied them with care and clearly with pleasure to himself. If the result is a reference book

rather than a history it is one to which economic historians will refer with gratitude.

J. A. La Nauze

University of Melbourne.

Australian Banking. By J. K. Gifford, J. Vivian Wood and A. J. Reitsma. Second Edition. (University of Queensland Press, Brisbane, 1955). Pp. xv + 275. 52/6 Aust.

The second edition of Gifford and Wood is a great improvement on the first which appeared in 1947. It is still a textbook and business reference book for "the ambitious young bank officer and other business men, especially accountants", rather than a study of the Australian banking system for students of economics. But the descriptive parts have been expanded and brought up to date and the theoretical sections very greatly improved. The chapters dealing with foreign exchange practice have been brought together in a separate Part IV and include a most useful account of Australian exchange control. The section on monetary theory still has an old-fashioned ring about it—the amount of money spent on goods still "depends on" the amount of money in circulation and its average velocity of circulation—but there is some breezy and sensible discussion of post-war Australian monetary policy. The most radical and welcome change from the first edition is an entirely new Part V, written by Mr. Reitsma, which consists of an exceedingly competent and comprehensive outline of international economics. But why deter the ambitious young officer by so drab a cover and so awkward a format?

H. W. Arndt

Canberra University College.

Money and Banking in British Colonial Africa. By W. T. Newlyn and D. C. Rowan. (Oxford University Press, 1955). Pp. xiv + 301. 54/6 Aust.

In recent years increasing attention has been given to comparative banking systems and their appropriateness for the economies they serve. This study is a comprehensive descriptive and analytical treatment of the financial institutions of eight British territories in West, Central, and East Africa. The opening chapters are descriptive, followed by an analysis of the factors influencing the money supply in dependent economies, and the concluding chapters are prescriptive.

These territories, which have varying degrees of self-determination, are largely the responsibility of the Secretary of State for the Colonies. The steady and substantial growth of the Colonial Areas' sterling balances, half of which in June 1954 belonged to the territories under review, is a challenging paradox in view of the fact that all these

areas are economically underdeveloped and might reasonably be expected to be draining sterling from the central fund rather than lending to it. Indirectly the authors shed light on this paradox by describing the operations of the Currency Boards, the dominating expatriate supra-territorial banks and other institutions (e.g. post office savings banks) which tend to hold sterling rather than local assets. In Nigeria indigenous banks have emerged which, while still embryonic, promise to serve the local needs of the African entrepreneur whose activities are confined to rural industry and small-scale light manufacture, transport and trade, undertakings largely neglected by the expatriate banks. The entrepreneur's lack of knowledge of commercial methods, and his social environment, make him a difficult risk to assess, so that the successful development of native industry will depend on "lending on character" which gave English country banking its strength in the nineteenth century.

The analysis of the influences operating on the levels of domestic income and the money supply in these territories is relevant to the Australian economy; they too are subject to wide fluctuations in export earnings but the lack of autonomy in controlling their financial affairs causes greater flexibility in their money supply. The concluding chapters, dealing with the economic analysis of the determination of domestic income and liquidity in these export economies and the policy issues involved, contain much of interest to students of these problems in Australia.

R. R. Hirst

University of Adelaide.

West African Trade. By P. T. Bauer. (Cambridge University Press, 1954.) Pp. xvi + 450. 55/- stg.

West Africa has, until recent years, been neglected by economists. There is little informed discussion of economic policy in Nigeria and, though the situation in this respect is better in the Gold Coast, it is still not good. Facts are relatively few, fancies deplorably plentiful; in consequence, local attitudes to questions of economic policy are as often based upon dogmas as upon reasoned analysis. In such a situation the first function of an economist is (in the opinion of this reviewer) to expose these dogmas to the tests of economic analysis and empirical research. In this study, which was commissioned by the Colonial Office and carried out under the auspices of the Colonial Economic Research Committee, Dr. Bauer has made a notable contribution to the critical examination of local beliefs. Moreover, he is to be congratulated on presenting both his descriptive matter and his analysis clearly enough to be intelligible to the layman and fully enough to satisfy his professional colleagues. His book deserves to be

widely read—particularly in West Africa, for there can be no doubt that, if its distressingly high price does not prove an insuperable barrier, both Africans and colonial administrators will find it fascinating, disturbing and salutary reading.

The study begins with a review of the general characteristics of the West African economies; then passes to a lengthy study of the territories' import trade with special reference to the forces tending to preserve and increase its present concentration in the hands of a relatively small number of expatriate enterprises. This is followed by an examination of the export trade and a critical discussion of policies of the statutory Marketing Boards. Finally, chapters are devoted to an analysis of certain proposals for marketing reform and the territories' internal trade. Throughout his study Dr. Bauer has scrupulously limited himself to description and analysis. He makes no explicit policy proposals and this, though at first sight disappointing, is probably wise, since the very absence of proposals should stimulate local discussion (besides avoiding possibly awkward political complications).

Dr. Bauer's views on the policies of the Marketing Boards are already well known. The analysis on which they are based is given very fully and fairly in this book. This is not the only instance of his questioning of official policy. Immigration policy, which is certainly restrictive, is shown to be a factor inhibiting competition in the import trade (pp. 165-170) and in several chapters other important but questionable official dogmas are given a searching examination. Thus the fallacy of the official attitude that trade is unproductive (an astonishing one in view of the sources of West Africa's economic development) is admirably exposed (pp. 22-34), while another view popular among officials, namely that increased exporters' incomes lead to sharp rises in the prices of domestic foodstuffs, is strongly questioned in relation to the "anti-inflationary" defence of the Marketing Boards' price policies (pp. 331-333).

Finally let me make it plain that the book is not only of interest for those concerned with West Africa. Economists concerned with development problems will also find it fascinating and rewarding reading.

D. C. ROWAN

University of Melbourne.

Economic Progress. Papers and Proceedings of a Round Table held by the International Economic Association. Edited by L. H. DUPRIEZ. (Institut de Recherches Economiques et Sociales, Paris, 1955.) Pp. 574. No price stated.

This volume—a limited offset edition—reproduces the nineteen original and unabridged papers submitted to a Round Table on

Economic Progress in 1953. Both authors and participants in discussion include well known figures in economics.

The papers may be roughly classified as follows: *Methodology.* J. Fourastie summarizes problems in the statistical measurement of progress. J. Dalmulder uses indifference analysis to examine the relationship between expansion and economic welfare, but it may be doubted whether the technique is useful in dynamic problems of this kind. H. Guitton has an interesting paper on economic progress and general human progress. C. Gini contrasts occidental and oriental conceptions of progress. His emphasis on the views of Mukerjee leads, however, to a caricature of the Oriental concept. L. H. Dupriez seeks to determine the principles basic to a theory of long-run development. A. Marchal discusses the relationship between short and long period analysis. *Historical.* S. Kuznets summarizes statistical evidence on population, income, and capital trends. H. J. Habakkuk discusses the basic conditions of progress from the historical point of view and seeks to explain why industrialization came first to England. H. Giersch is concerned with the analytical merits of the stage approach to the problem of economic development. While not successful with this, he provides an interesting commentary on strategic factors in development. *Factors and Their Environment.* E. D. Domar discusses ways of defining and measuring capital coefficients, reasons for their apparent stability in advanced countries, and differences between industries. A. K. Cairncross in discussing the place of capital in economic progress also discusses capital coefficients but his arguments tend to lead to the conclusion that the importance of capital to progress has been exaggerated. E. Dahmen discusses the role of technology and innovation in industrialization, and A. Gerschenkron the importance of social attitudes and entrepreneurship. *Structural Adjustments.* W. W. Rostow is concerned with the relation between economic growth in general and structural changes. While he begins with a reference to his well-known propensities, he makes little use of them in his subsequent analysis. A. Sauvy discusses occupational migration and training as conditions and consequences of progress. *Backward Countries.* While most papers make reference to backward economies two are specially concerned with them. H W. Singer discusses the relationship between agricultural improvement, technology, population, and industrialization. C. N. Vakil is concerned with technical knowledge and managerial capacity as limiting factors in development. *Policy.* L. Duquesne has a trite discussion of economic policy in general: it is little more than a catalogue of ways in which state action may affect progress. H. S. Ellis in discussing monetary policy denies that inflation is either a necessary or desirable feature of development in backward countries, claims that banking systems there have more effective

power to control inflation than is generally allowed, argues that stabilization policies are possible for such economies, and that practicable methods to mobilize savings exist.

The part that capital plays in development receives considerable attention. Kuznets and Frankel favour a definition of capital to include expenditure on education, training, and research; Domar objects not only because of difficulties in defining boundaries but also because there are advantages in considering them separate variables. Domar, Giersch and Cairncross doubt the usefulness of aggregate capital coefficients, are puzzled to explain their relative stability, and doubt their relevance to backward countries. Habakkuk and Cairncross believe too much stress has been placed on capital in development: in Western Europe capital scarcity had not hindered progress; development itself had furnished the necessary capital formation; it is doubtful if innovation in the West makes large demands on capital. Nevertheless, there is a real capital scarcity in backward areas. This requires great economy in its use through the avoidance of costly urbanisation, capital itensive industries, and inappropriate labour-saving techniques (Singer).

The emphasis is now more upon social factors in progress. Though this may make an approach to development broad and ill-defined (e.g. W. A. Lewis, *The Theory of Economic Progress*) it does bring fundamental factors into the foreground. Gerschenkron and Habakkuk discuss the social environment necessary for entrepreneurship. Millikan stresses that factor proportions make western techniques inappropriate for backward countries where techniques must take into account surplus labour, capital scarcity, and lack of skill and knowledge. Vakil outlines the difficulties in developing the appropriate knowledge and managerial skill in primitive economies. The problem of the relation of population to progress is frequently raised. Kuznets regards population as "the main carrier of economic growth and the touchstone of its results" and writes "no theory of economic growth can be formulated without taking population into account", but space allows him little more than a brief statistical survey. Dahmen points to the limited time horizon imposed by a high death rate. Singer discusses the relation of population to types of development programmes, types of techniques necessary, and savings and investment. Habakkuk emphasizes the effects of population characteristics upon industrial growth. It is abundantly clear from the papers and discussion that we wait upon some modern Malthus to sketch in broad outline the differing relationships between development and population in advanced and backward economies.

The conditions favourable to economic growth are so varied that "it is not possible to give a list of essential requisites that is more than a string of platitudes" (Habakkuk). This might be avoided if there

was some general theory, some conceptual scheme, within whose framework the various bits of evidence might be pieced together in a composite picture. No paper attempts this task; it is probably too early for it to be attempted. Habakkuk does, indeed, in his brief though brilliant survey come close to this, for he bases his approach upon the belief that "Adam Smith's explanation of the mechanics by which the advance was achieved is still the most reasonable".

This is a volume of which it is true to say, as reviewers so often do, that it should be read by every economist interested in the subject.

JAMES P. BELSHAW

University of New England.

Income and Wealth, Series IV. Edited by MILTON GILBERT and RICHARD STONE. (Bowes and Bowes, London, 1955.) Pp. xii + 388. 42/- stg.

The fourth volume in this series is the first instalment of some papers presented to the Castelgandolfo conference of the International Association for Research in Income and Wealth during September 1953. There are three papers on model building in relation to the national accounts; two on international comparisons of real product; two on the compilation and use of national income statistics in Eastern Europe; and three miscellaneous papers on national accounts in economic analysis, a United States national balance sheet and the measurement of real national income. One may comment upon the long period, some two years, between the presentation and publication of the papers, as those articles surveying current developments can lose much of their impact during that time.

The group of papers on models and national accounts includes a paper by Ragnar Frisch entitled "From National Accounts to Macroeconomic Decision Models", in which the status of economic theory as a tool for economic policy and use of national accounts for this purpose are discussed. Professor Frisch's decision model is a theoretical model supported by empirical evidence and constructed with the specific object in mind of discussing the probable consequences of alternative courses of action. Therefore the model must be constructed in a manner permitting different economic systems to be incorporated in it; only if this criterion is met can valid comparisons be made between the results of different types of economic policy. As the work is associated with input-output and activity analysis the claim that such a model differs from those usually employed cannot be readily accepted.

Richard Stone presents an admirable survey of the relation between model building and social accounts; it is in reality broader than the title might suggest as the paper outlines developments in the construction of models of the economic process. Yet there are some

reservations. First, the section on the current relationships between capital formation and product reflects the existing fashion in economics which makes investment decisions a function of capacity and output. Despite recent controversy there is some merit in the notion of autonomous investment, while Schumpeter's concept of innovations deserves more than lip-service. Secondly, when reviewing the unsatisfactory results of empirical tests of the acceleration principle, Mr. Stone might well have recalled Harrod's comment in the *Economic Journal* of March 1952 (pp. 131-3) to the effect that the acceleration principle implies a perfect technical adjustment of investment to changes in production, and fluctuations occur because this requirement is not fulfilled. In short the principle cannot be tested empirically. For these reasons alone one can appreciate Mr. Stone's conclusion supporting the subdivision of the investment aggregate if there is to be adequate analysis in the future.

Both Mr. Stone and Messrs. Schouten and Lips in their paper "National Accounts and Policy Models" emphasise the inadequate treatment of monetary influences and capital transactions in the construction of models and national accounts. More recent work has shown the importance of these neglected aspects. Milton Gilbert and Irving Kravis review some of the problems met in their study of comparative real national products undertaken for the O.E.E.C. While there is no new material in this article the problems are discussed succinctly. On the same general topic Deborah Paige and S. Adler provide a lucid analysis of the industry-of-origin approach to international comparisons of real product.

The two articles on the nature and use of national accounts in Eastern Europe summarize developments in that part of the world. Professor Marczewski presents a very long and interesting appraisal of the use of national accounts. Mr. Jackson's article deals with the concept of national accounts and is, by and large, a comparison with the Western viewpoint. While one appreciates the difficulties surrounding comparisons of national income between developed and under-developed countries, the suggestion that it is unnecessary to have the same definition of national income at different stages of development is not satisfactory. He suggests, for example, that a whole lot of services performed in under-developed countries should be neglected as they are a function of poverty. One would think rather that, where difficulties of comparison are great, lesser aggregates of production would be more suitable. At least this article shows a need to restrain the adoption of settled definitions for national income studies.

The remaining three papers comprise J. L. Nicholson on "Some Problems in the Measurement of Real National Income", G. Stuvel

on "The Use of National Accounts in Economic Analysis" and Raymond Goldsmith on 'The National Balance Sheet of the United States of America, 1900-1949".

W. P. HOGAN

Australian National University.

The Theory of Fiscal Economics. By EARL R. ROLPH. (University of California Press, Berkeley, 1954.) Pp. 310 + xiv. $4.50.

Professor Rolph's substantial treatment of the theory of taxation is worth careful study. Even if one cannot agree with all its conclusions, it contains a great deal of good sense (particularly on definitional questions) and is in all places stimulating.

Starting with a consideration of the nature of government activity and the place of government in a conceptual framework of social accounts, it proceeds, *via* a discussion of monetary theory, to a detailed analysis of the effects of excise taxes, import duties and income taxes on resource allocation, income distribution and incentives to work and to invest. Some of it does not make easy reading, but it clarifies on a second acquaintance.

Professor Rolph regards taxes as monetary transfer devices to reduce private money incomes and increase government money income. As such they do not impose a real burden on the community as a whole. The cost of government is measured by government use of resources, *i.e.* government expenditure on goods and services, not by government revenue. Taxes should be regarded as having three major functions. First, they are anti-inflationary devices (they reduce private spending). Secondly, they redistribute money incomes within the private sectors of the economy. Thirdly, they influence incentives, because through being tied to a base they may induce people to attempt to modify their tax liability.

This view of taxes, together with the theory of incidence developed later in the book, has certain implications for the conceptual framework of social accounts within which Professor Rolph works. All taxes, both indirect and direct, are regarded as transfer payments in the strict sense. Interest payments are similarly regarded. This latter is in accordance with the approach of H. P. Brown, in his well-known (in Australia) paper in the *Economic Record* Supplement of 1949. Professor Rolph regards the distinction between direct and indirect taxes as unnecessary for social accounting. In consequence the concept of net national product at factor cost is soundly debunked. On these points this reviewer finds himself in substantial agreement. It also follows from Professor Rolph's view of taxes that no meaning can attach to statements such as "the consumer pays the tax" or "the foreigner pays the tax".

Before proceeding to his detailed analysis of tax incidence, Professor Rolph sets out a monetary theory appropriate for his purpose. He discards the Keynesian theory of income determination, on the grounds that current income cannot determine current expenditure which determines current income. Contemporaneous events cannot be mutually causal. Instead he postulates that the capital value of a person's assets is the dominant objective determinant of expenditures. It follows that for the community as a whole, its expenditure on things other than old assets is limited by the extant quantity of money and the amount of money the banking system is prepared to create. Although Professor Rolph rejects the Keynesian theory and several variants of it, he seems to be sympathetic to the Robertsonian period analysis and appears to use it to some extent in his own analysis. This reviewer cannot accept the author's out-of-hand rejection of the Keynesian analysis. It is true that the essentially static character of the original Keynesian theory does present logical difficulties. But these difficulties are no more than those in any general equilibrium theory of a "timeless" kind. The test is surely that the Keynesian system has proved a useful mode of thought in the actual problems of the real world. Furthermore whatever one thinks about current consumption being determined by current income, the flow of income (past, present and anticipated) does influence the flow of consumers' spending to a very marked degree and almost certainly more systematically than does the asset position of consumers.

A consideration of Professor Rolph's detailed conclusions on particular types of taxes cannot be set out here. However a few words ought to be said about his treatment of a general excise tax. He concludes that under conditions of perfect competition such a tax accompanied by compensatory lump-sum transfers equal to the yield of the tax will not result in a rise in the price-level, but will cause a fall in the money incomes of factors of production before lump-sum transfers equal to the yield of the tax. This conclusion seems to depend on the existence of a lag in spending. Spending is determined from the previous period and the imposition of the tax in the current period does not change the level of monetary demand. Trading enterprises are price takers and, demand being unchanged, prices do not rise. Attention to this possibility has recently been drawn by A. R. Prest in a paper in *Economica* (August 1955); Prest points out that in the absence of a lag prices would rise by the amount of the tax. However, when perfect competition does not exist and trading enterprises are price makers, Professor Rolph points out that prices can rise by the full amount of the tax. If trading enterprises pass on the tax, output will fall, because monetary demand is determined from the previous period. In this event the government will have to make lump-sum

transfers equal to twice the tax collected (actually equal to twice the tax collected plus the product of the tax collected and the rise in prices—Professor Rolph seems to have neglected the area WZPT in his Figure 16) in order to maintain full employment. Professor Rolph gives the impression that this net revenue loss must be a continuing affair. However, it will be necessary for only one period, since once the unemployment has been eliminated, monetary demand can be sustained at a constant level so long as the tax collected is just offset by the lump-sum transfers. Naturally if private individuals maintain their spending in real terms rather than in money terms, as Professor Rolph assumes, no unemployment will occur. But there will be a private deficit for one period instead of a government deficit. Incidentally, in this context Professor Rolph refers to indirect taxes as "a nuisance because they lead directly to price inflation and underemployment". The use of the term "inflation" in this connection is misleading. Indeed his example shows the essentially anti-inflationary nature of indirect taxes in this situation.

P. H. KARMEL

University of Adelaide.

The Budgetary Process in the United States. By ARTHUR SMITHIES. (McGraw-Hill, New York, 1955). Pp. 486. $6.50.

The Federal budget plays a very important role in the United States to-day. Yet the processes by which the Federal government's policy objectives are translated into the actual budget are not entirely satisfactory. In this book Professor Smithies, at one time on the staff of the Bureau of the Budget, discusses these budgetary processes and examines proposals for their improvement. The work was carried out under the auspices of the Committee for Economic Development.

Part One is an introductory background. The author accepts three budgetary principles: first, that expenditure proposals should be considered in the light of the objectives they are intended to further; secondly, that budgetary procedures should permit the joint consideration of expenditure and revenue proposals; and thirdly, that these procedures should assist in promoting economy and efficiency in the conduct of government operations. The remainder of the book is built around these three principles. The writer intentionally makes no attempt to discuss or to justify the government's basic policy objectives themselves.

Part Two consists of a review of budgetary procedure in the United States, past and present. It is shown that many of the present shortcomings in this procedure have an historical explanation. For instance, the failure by Congress to assess revenue and expenditure proposals together goes back to the days when customs revenue was

so buoyant that availability of revenue was not an important consideration.

Part Three, the most important section of the book, is devoted to an examination of the present weaknesses in the budgetary process, both on the side of Congress and on the side of the President and the Executive. A number of important suggestions are made for improving Congressional procedures and for changing the form in which the President's budget is presented to Congress.

In Part Four there is a detailed examination of the Defence Budget. Special emphasis is placed on cutting down the time at present taken in its formulation.

Part Five is concerned with a number of non-defence programmes: water-resources, agriculture, veteran's benefits, government business enterprises and lending agencies, and Federal grants-in-aid. The author is critical of the budgetary priority given to certain types of expenditure which are, in effect, exempted from the discipline of the appropriations process.

The final section of the book provides a very brief review of the economic impact of the budget, including an assessment of the case for the annually balanced budget.

Professor Smithies' painstaking and scholarly study is confined to the American scene. But the reader will find many of his criticisms and recommendations pertinent to Australia. After all, our own budgetary procedures are not beyond reproach.

A. H. Boxer

University of Melbourne.

Introduction to International Trade and Finance. By Lorie Tarshis. (John Wiley and Sons, New York, 1955.) Pp. x + 536. $6.00.

The growing body of literature on international economics is, on the whole, a rather austere diet, but this book should go a long way to redress the balance. Those who find such standard works as those of Meade and Viner unpalatable have here a volume much more to their taste. It gives a lucid and eminently readable introduction to international economic theory and such topics as the foreign trade multiplier and the doctrine of comparative costs are presented in a way that the layman can readily understand. The discussion is liberally interspersed with illustrations from recent international economic history, which help to maintain the reader's interest.

The book is designed as a text for undergraduates, many of whom will have had no more than an introductory course in economics. It aims to bring the student face to face with the important issues in this field and to teach him a method of analysis rather than provide him with ready-made answers. With this end in view the organisation

of the material is original but effective. After an introductory section justifying the existence of international economics as a distinct subject, the author sets out to examine the ways in which international transactions can affect a country's economy. This involves introducing the reader at the outset to the national income approach and the foreign trade multiplier. The author then proceeds to deal, in parallel sections, first with the trade in goods and services and the principle of comparative costs, and then with the trade in securities, as he describes international capital movements. It is not until almost half-way through the book that we are introduced to the balance of payments and the possibility and consequences of disequilibrium in this balance. The various ways of dealing with balance of payments disequilibrium are then discussed at some length. The final sections of the book are concerned with the international propagation of economic fluctuations and with national and international measures for controlling them.

Naturally enough, the book has been written with an eye to the American reader, both in the analytical presentation and in the selection of illustrations. For example, in discussing the determination of exchange rates, the analysis is expressed in terms of the supply of, and demand for, a country's own currency. It is pointed out in a footnote (p. 329) that the functions could just as well relate to the demand for, and supply of, foreign exchange, but no mention is made of the fact that the shapes of the curves would be quite different. In a country like Australia the discussion would be more readily understood if couched in terms of foreign exchange. A somewhat similar point can be made with regard to the discussion of the effect of exchange variations on the terms of trade (pp. 332-4). While this is a matter of major importance for large industrial countries it would have been worthwhile pointing out that it is of minor importance for many primary producing countries, where the supply of exports is highly inelastic and where export and import prices are determined by conditions on external markets.

There are a few instances in which the author's terminology is unfortunate and even confusing. After quoting the International Monetary Fund's Balance of Payments Manual as the generally accepted authority on balance of payments presentation (p. 265) he fails to point out that his own treatment of unilateral transfers as a capital account item is contrary to that adopted in the Manual. Again his classification of a balance of payments disequilibrium which can be corrected by a change in the exchange rate as a *transitory* disequilibrium (p. 302) conflicts with the terminology adopted in the Articles of Agreement of the Fund, under which a member undertakes not to propose a change in the par value of its currency except to correct a *fundamental* disequilibrium. In his discussion of the International

Trade Organisation (p. 490) there is also a confusion between the Charter provisions permitting the maintenance of existing preferences (Article 16.2) and those permitting the establishment of customs unions (Article 44). The Charter uses the term customs union to describe a single customs territory within which duties are substantially, if not entirely, eliminated. It is, therefore, confusing to apply the term to such preferential arrangements as those operating under the Ottawa Agreement. The footnote (p. 495) pointing out that "sometimes a customs union is taken to mean the complete absence of trade barriers among the members . . ." is insufficient to remove the confusion.

Some readers will no doubt raise more fundamental objections to parts of the analysis. Sticklers for the purity of economic science will probably object to the inclusion of such topics as the ideal pattern for international capital movements (Chapter 19), but those who feel that an attempt should be made to answer these questions, even though this involves the making of bold assumptions about the international as well as interpersonal comparisons, will find the discussion stimulating and instructive.

Although a textbook written primarily for American readers can never be completely satisfactory for Australian use, the disadvantages in this book are relatively minor and it can be highly recommended to Australian teachers and students in this field.

D. G. BADGER

Sydney.

British Post-War Migration. By JULIUS ISAAC. (National Institute of Economic and Social Research Occasional Papers, No. XVII.) (Cambridge University Press, 1954). Pp. xix + 310. 30/- stg.

This analysis of the pattern of British post-war migration, with its careful description of the sample survey of British emigrants from the United Kingdom and its critical comment on the limitations of the statistical material available, is an important addition to the studies of population change and migration that have appeared in recent years. Well documented, amply supplied with charts and tables, effectively indexed and provided with illuminating appendices, it is a valuable contribution to our understanding of the factors influencing British post-war migration.

The primary object of Dr. Isaac's study is to examine the amount and character of the migration to and from Britain in the economic and social setting of the post-war years. The inquiry opens with two short chapters: one dealing with the impact of the war upon migratory movement to and from the United Kingdom and the other giving an account of the sample survey covering migratory movements on the long sea routes. It then presents a detailed examination of British

post-war migration in three phases: analyses of the outward movement from Britain, of the inward movement, and of the balance of migration. To this are added two closing chapters of considerable interest. One deals with "The Future of British Migration" and is "an appraisal of the future behaviour of those forces which according to the analysis given . . . have determined the movements during the first six post-war years". The other, "British Migration Statistics Reconsidered", discusses the limitations to the analysis imposed by the "gaps and inaccuracies in available statistical information".

The evidence derived from the sample survey shows that emigration from Britain in 1946 and 1947 was largely "post-war" emigration. The outward movement in 1948 and 1949, however, was to a much larger extent "peacetime" emigration.

In the five post-war years when 3,000,000 Europeans emigrated to overseas countries about every fourth emigrant from Europe was a British national from the United Kingdom. Of these British emigrants rather more than four-fifths went to Commonwealth countries. The chapters dealing with Australia, Canada and New Zealand as receiving countries are particularly interesting for Dominion readers, as is the section in the penultimate chapter discussing the characteristics of British migration in the near future.

Clearly acknowledged are certain widely accepted principles underlying British emigration policy—"no pressure on British nationals to emigrate, no promotion of emigration without active co-operation of the Dominions, safeguards in respect of Britain's population and manpower needs . . . [and the recognition that] no resident in Britain should be prevented from emigrating if he so desires".

MERAB HARRIS

University of Western Australia.

Economic Control. By MICHAEL P. FOGARTY. (Routledge & Kegan Paul, London, 1955.) Pp. x + 324. 21/- stg.

By "economic control" Professor Fogarty means the mechanisms by which society makes its basic economic decisions concerning production and provision for the future. The three mechanisms are competition, direction and consultation; Professor Fogarty discusses the fields within which each of these operates, their working and limitations and possibilities for improvement. Much of the theory of the working of an economy is presented in an elementary way and a great deal of institutional and descriptive material, including sixty-two tables, is included. The book will be of most use to the general reader and to the student of "Descriptive Economics", but there will be few economists who would not learn something from the breadth and freshness of Professor Fogarty's treatment of familiar things.

Those who are interested in Professor Fogarty's three-year course in industrial relations at Cardiff will probably be disappointed that there is not more discussion of industrial relations as such. What has been sought seems rather to be the application of developments in industrial relations theory and practice to economic problems generally. The Roman Catholic background to Professor Fogarty's thought helps in this direction. The role of consultation as a mechanism of control is stressed, as also is the importance of the social group, from the international level to that of the firm. There is much here that is well worth consideration and one would like to see a strict theoretical treatment of Professor Fogarty's ideas.

The book gives evidence of having been hastily written and often seems superficial and dogmatic. It should, however, be useful and stimulating to many readers.

KINGSLEY LAFFER

University of Sydney.

The Theory of Wages. By R. K. ROTHSCHILD. (Basil Blackwell, Oxford, 1954.) Pp. vii + 178. 18/- stg.

This book is in three parts. Part One deals with wage determination under perfect competition, and this is admirably done in terms of demand and supply.

However, in his quest for lucidity, the author has perhaps tended to oversimplify the theory of demand for labour, and to treat it with less rigour than might have been expected in a work of this kind. It would have been useful, for example, to trace the relationship between physical productivity, value productivity (gross and net), and the demand curve for labour. This would have enabled the reader to appreciate precisely what range of the downward phase of the marginal product of labour curve was relevant for the demand for labour curve. It is a pity also, that only two of Marshall's famous rules of derived demand, viz. those relating to elasticity of substitution and elasticity of demand for the product, should have been discussed. And even here the impact of these factors on the demand for labour via the productivity of labour is not clearly shown.

The second part of the book introduces the complications of the real world—frictions and barriers, monopolistic and monopsonistic conditions, trade unions and bargaining power, and finally wages under the trade cycle and full employment. One minor criticism which might be voiced here is the absence of a clear distinction between the problems of the wage structure and those of the general level of wages.

The final section is called "Wages and the Community", and deals with minimum wages, the share of wages in national income, and (in an excellent concluding chapter) the limitations of pure "economic"

theory. In spite of the author's claim that he has dealt almost exclusively with wage *theory*, the assumptions and illustrations of his theory are drawn very much from the real world.

One strong word of criticism on this section. In view of the author's claim in the preface that the book aims at bringing together "the relevant developments in other fields with the hard core of traditional wage theory and thus offers a survey of the present state of the discussion", it is unfortunate that the reader should be given the impression that Kalecki has said the last word on the share of wages.

These criticisms do not detract from the general excellence of the book. The undergraduate and his teacher will be grateful to Professor Rothschild.

J. E. Isaac

University of Melbourne.

A General Theory of Economic Process. By Neil W. Chamberlain. (Harper & Brothers, New York, 1955.) Pp. viii + 370. $5.

Chamberlain's previously published work has been confined to labour economics and industrial relations. However, as he states in the preface to this "General Theory", "I had reached a stage where the significance of my further research appeared to depend on the relevance of union-management relationships to economic activity generally, requiring a larger theoretical framework in which to cast the specialized studies. There were, however, several respects in which current theory seemed deficient for this purpose, and my only recourse was to accept the challenge. This is the result" (p. vii). And a very interesting and challenging result it has proved to be. For Chamberlain has attempted to provide a new conceptual framework by carrying over into the general field of economics, ideas and concepts from his own field of industrial relations and from sociological theory.

Chamberlain begins by discussing "economic" aspirations and their satisfaction. "Aspiration" is a wider concept than wants and relates to satisfactions found through the use of scarce resources and through the work process. Furthermore, aspirations are not to be regarded as given and constant. They relate to a person's life-span and embody "proximate goals, intermediate objectives, and ultimate ends". These objectives tend to be structured for the individual by the comparison of his own achievement with the achievement of others in related social and income groups. Consequently, decisions as to the needs for and methods of obtaining income (the revenue decision) interact with decisions as to the amount and kinds of expenditure that should be made (the budget decision).

To achieve our aspirations we must not only compete with others because of the scarcity of resources relative to our aspirations, but also

co-operate with others "in a world where specialization has led to interdependence". The terms on which we co-operate are arrived at by a bargaining process (which may take various forms), and depend on the relative bargaining power of each party to the agreement.

Bargaining power is the power to reach an agreement on one's own terms. It is defined as the other party's inducement to agree on one's own terms. "Whatever affects another's costs of disagreement and agreement on one's own terms, thus determines one's own bargaining power" (p. 100). The determinants of these costs are the aspirations and alternatives of the other party, which together establish how much is given up by failing to effect the particular relationship, and how much is given up by effecting it. Bargaining power can be manipulated by any device which affects the aspirations and alternatives of those with whom the bargain is sought. The network of competitive and co-operative relations, arising out of scarcity and interdependence, thus build a web of bargaining relations.

The use of resources involves flows of income at the level both of macro- and of micro-economics. The significance of price is the effect on bargains, and the significance of bargains is the resulting effect on income flows. These income flows are associated with organisational units, chief among which are households, firms and governmental units.

The revenue (inflow) and budget (outflow) decisions represent a complex of bargains. The function of management, in any economic unit, is to co-ordinate the mass of bargains at a level and with a composition that provides, for everyone on whom the result depends, a cost of agreement lower than the cost of disagreement. At the same time the result must represent for management, in a subjective sense at least, the best approach to achieving its own aspirations. And in order to maintain the balance between inflow and outflow at a preferred level, management must continually manipulate and re-negotiate bargains.

The exchange relationship is the bargain struck directly between the management of any economic unit and any other unit with whom co-operation (no matter how temporary) is sought. The political relationship is the bargain struck with any other unit to obtain or retain some measure of control over the co-ordinating function itself. Both relationships affect the flow of income and both are subject to manipulation. Political bargains may be struck within the unit itself, or between one unit and another.

The politician who seeks votes and the citizen who casts his vote are both offering terms which impose costs of agreement and disagreement on each other, and which may include political commitments directly affecting the flow of funds or indirectly affecting them by modifying the distribution of bargaining power. Political bargains can

only be excluded from economic analysis when they do not affect the size and direction of the flows of income.

Shifts in aspirations and alternatives affect bargaining power* and thus the flows of income. As the flow of income to any unit increases or diminishes, changes in budget decisions will have multiplier effects on other units. However, at the macro level these multiplier effects may cancel out. Only when multiplier effects are not offset, do we get a change in aggregate income. In this way, we can obtain a direct theoretical connection between micro-economics and Keynesian income analysis.

The above represents only an extremely brief outline of the main themes of the book, and is included here only to titillate the reader's curiosity into reading the book itself. Those wedded to traditional value theory may well object that the broadening of many of the traditional concepts—opportunity cost, wants, rationality, maximisation, etc.—leads to a loss of precision for which there is little to compensate. And certainly they will not be pleased to discover that the one diagram in which cost curves are drawn (p. 247), incorrectly represents the area of profit.

However, such a view would be misleading in several important respects. The conceptual framework that Chamberlain provides can certainly claim a greater generality in dealing with the problems of the allocation of scarce resources at the micro level. Further, it must score heavily for the co-ordination of micro and macro theories into a more coherent whole. And most important of all, it does provide a conceptual framework within which empirical studies (admittedly still to be done) can easily be fitted, in a manner that has not been possible with traditional value theory. This latter feature is, after all, the very *raison d'être* of the book itself. In any scientific discipline, deductions from concepts demand logical certainty, but, "... conceptual reliability rests on empirically ascertained probabilities" (p. 362).

It is interesting to note that the direct incorporation of the political process and political bargains leads Chamberlain to be rather cynical about the practicability of economists' policy suggestions. To have a chance of adoption, they must fit in with the purpose of some interest group. "They will be modified to purify them of anything which runs counter to this purpose, and to some extent they will be defiled with concessions designed only to induce the necessary others to agree on these terms. The only hope of the disinterested scholar who recommends policy in the *public* interest is that some *special* interest

* Galbraith's views on the development of countervailing power are summed up in one formidable sentence. "The expansion of bargaining units is thus likely to induce a shift in emphasis from commensal bidding for symbiotic co-operation to commensal co-operation for symbiotic competition." (p. 154.)

group . . . will find something in his proposal that it will want to foster for its own, not the public's gain" (p. 364). Surely, there is another alternative; namely, to combine with other disinterested scholars to form a special interest group which has as its special interest this mythical common good. Australian experience would suggest that, to be effective, such a group need not be greater than eight in number!

This book represents the first systematic application of sociological ideas to the field of economic theory. Such intrusions will undoubtedly become more common in future, when economists (especially non-mathematical ones) belatedly discover that many of the ideas and concepts of modern theorising in sociology, social phychology and politics can be usefully applied to economics. When this occurs, Chamberlain may claim, with some justice, to be the founder of a new school of economic thought.

H. R. HUDSON

University of Melbourne.

INDIAN JOURNAL OF ECONOMICS

(Founded by the late Professor H. Stanley Jevons in 1916)

No. 141 OCTOBER 1955 Vol. XXXVI

Editor: Dr. OM PRAKASH

CONTENTS

ARTICLES: Herbert Stanley Jevons—(Mrs.) ROSAMOND KONEKANYS. Equilibrium—Static and Dynamic: A Reply—VINOD DUBEY. Equilibrium—Static and Dynamic: A Rejoinder—J. K. MEHTA. Economic Dynamics and the Nature of the Keynesian System—Q. H. SIDDIQI. Mixed Economy in Theory and Practice—B. K. MUKERJEE.

NOTES and MEMORANDA. ECONOMIC LITERATURE.

The Indian Journal of Economics is published quarterly in July, October, January and April. The annual subscription (including postal registration charges is Rs 16/8/- or 25/- or $3.75. The price of a single issue (ordinary) is Rs 5/6/- or 8/4 or $1.25.

Write to the Managing Editor, Indian Journal of Economics, University of Allahabad, Allahabad-2 (India).

ECONOMICA

36th Year - New Series, Vol. XXIII, No. 89 - February, 1956

Industrial Growth and Industrial Revolutions .. .. D. C. COLEMAN
Marshall's Demand Curve .. .. R. F. G. ALFORD
Robert Torrens—1780-1864 .. .. S. A. MEENAI
Earned and Investment Incomes, U.K. 1952-53 .. .. E. C. RHODES
The Purchasing-Power of British Exports—A Rejoinder .. .. R. MARRIS
Trade and State Action in an "Underdeveloped" Economy .. .. .. Sir SYDNEY CAINE
Book Reviews. Books Received.

Single Copies, 8/6 stg. Annual Subscription, £1/5/- stg.

Published quarterly by the London School of Economics and Political Science.

All communications should be addressed to the Publications Department of the London School of Economics and Political Science, Houghton Street, Aldwych, London.

BOOKS RECEIVED*

A.—AUSTRALIAN AND NEW ZEALAND PUBLICATIONS

CHAMBERS, R. J. *The Function and Design of Company Annual Reports.* (The Law Book Co. of Australasia, Sydney, Melbourne and Brisbane, 1955.) Pp. 322. 84/- Aust.

ELSE-MITCHELL, R. *Hire-Purchase Law,* Second Edition. (The Law Book Co. of Australasia, Sydney, Melbourne and Brisbane, 1955.) Pp. 158. 50/- Aust.

This work annotates and explains the Hire-Purchase Agreements Act of New South Wales, with a comparative table of sections of the Acts of England, New Zealand and other Australian States. The new edition was necessitated by the deposit requirements introduced in 1955.

FRENZEL, KONRAD (ed.). *Atlas of Australian Resources 2.* (Prepared by the Department of National Development.) (Angus and Robertson, Sydney, 1955.) Five maps with commentaries. 10/6 Aust. each.

NICHOLSON, D. F. *Australia's Trade Relations.* (F. W. Cheshire, Melbourne, 1955.) Pp. 316. 42/- Aust.

B.—OTHER PUBLICATIONS

ALTON, THAD PAUL. *Polish Postwar Economy.* (Studies of the Russian Institute, Columbia University.) (Columbia University Press, New York, 1955.) Pp. 330. $5.75.

ARNIM, WOLF VON. *Die wirtschaftliche Entwicklung der Indischen Union unter Berücksichtigung der deutschen Beteiligungsmöglichkeiten.* (Kieler Vorträge, 7.) (Institut für Weltwirtschaft, Kiel, 1955.) Pp. 19. No price stated.

ASSOCIATION OF INDIAN TRADE AND INDUSTRY. *Financial Trends in the Cement Industry.* (Association of Indian Trade and Industry, Bombay, 1954.) Pp. 57. Rs. 2/8.

BEHRENS, C. B. A. *Merchant Shipping and the Demands of War* (History of the Second World War. United Kingdom Civil Series). (Her Majesty's Stationery Office and Longmans, Green, London, 1955.) Pp. 494. 35/- stg.

BONDA, H. J. *Goods Currencies.* (English Universities Press, London. No date of publication.) Pp. 68. 7/6 stg.

BUCKLEY, KENNETH. *Capital Formation in Canada, 1896-1930.* (Canadian Studies in Economics, No. 2.) (University of Toronto Press, Toronto, 1955.) Pp. 163. $3.25.

CHANDRASEKHAR, S. *Population and Planned Parenthood in India.* (George Allen and Unwin, London, 1955.) Pp. 108. 12/6 stg.

COMMISSION ON INTERNATIONAL COMMODITY TRADE. *1955 Survey of Primary Commodity Markets.* (United Nations, New York, 1955.) Pp. 122. 12/6 stg.

COPPIETERS, EMMANUEL. *English Bank Note Circulation 1694-1954.* (Institute of Economic and Social Research, Louvain, and Martinus Nijhoff, The Hague, 1955.) Pp. 171. 17/6 stg. approx.

DAVIDSON, RALPH KIRBY. *Price Discrimination in Selling Gas and Electricity.* (The Johns Hopkins Press, Baltimore, 1955.) Pp. 254. $4.00.

DICKINSON, ROBERT E. *The Population Problem of Southern Italy. An Essay in Social Geography.* (Maxwell School Series—II.) (Syracuse University Press, Syracuse, N.Y., 1955.) Pp. 116. $3.00.

DIESSLIN, HOWARD G. *Agricultural Equipment Financing.* (Occasional Paper 50.) (National Bureau of Economic Research, New York, 1955.) Pp. 95. $1.25.

* Acknowledgment of publications does not guarantee review.

DU PONT DE NEMOURS, PIERRE SAMUEL. *On Economic Curves.* (Reprints of Economic Tracts.) (The Johns Hopkins Press, Baltimore, 1955.) Pp. 17. $1.50.

DUPRÉEL, EUGÈNE. *La Pragmatologie.* (Institut de Sociologie Solvay, Collection de Sociologie Générale et de Philosophie Sociale, 2.) (Les Editions du Parthenon, Brussels, 1955.) Pp. 95. 175 francs belges.

"The fundamental idea of Pragmatology", to translate a sentence from the preface, "is to be found in the hypothesis that the class of social relations and that of biological relations are only particular applications of universal relations which characterise the 'existent' whatever it may be."

ELLINGER, A. G. *The Art of Investment.* (Bowes and Bowes, London, and Melbourne University Press, 1955.) Pp. 170. 25/- Aust.

FABRICANT, SOLOMON. *Government in Economic Life.* (Thirty-fifth Annual Report of the National Bureau of Economic Research.) (National Bureau of Economic Research, New York, 1955.) Pp. 78. Available free on application.

FAIR, T. J. D. *The Distribution of Population in Natal.* (Natal Regional Survey, Volume 3.) (Oxford University Press, London, 1955.) Pp. 98. 49/9 Aust.

GADGIL, D. R. *Economic Policy and Development (A Collection of Writings).* (Gokhale Institute of Politics and Economics, Poona, 1955.) Pp. 248. 12/- stg.

GILBERT, MILTON, and STONE, RICHARD (ed.). *Income and Wealth. Series IV.* (International Association for Research in Income and Wealth.) (Bowes and Bowes, London, 1955.) Pp. 388. 42/- stg.

GROSSER, ALFRED. *Western Germany: from Defeat to Rearmament.* (George Allen and Unwin, London, 1955.) Pp. 249. 18/- stg.

GUTTERIDGE, THE LATE H. C., and MEGRAH, MAURICE. *The Law of Bankers' Commercial Credits.* (Europa Publications, London, 1955.) Pp. 227. 25/- stg.

HABERLER, GOTTFRIED. *A Survey of International Trade Theory.* (Special Papers in International Economics, No. 1). (International Finance Section, Department of Economics and Sociology, Princeton University, 1955.) Pp. 68. Free on application.

This is a translation of an article published in 1954 in the *Handwörterbuch der Sozialwissenschaften*, revised and enlarged by the author. It presents the theoretical skeleton without the aid of mathematics and with a bare minimum of institutional details. (The Special Papers, of which this is the first, make the third of the series sponsored by the International Finance Section.)

HAGUE, DOUGLAS C., and STONIER, ALFRED W. *The Essentials of Economics.* (Longmans, London, 1955.) Pp. 173. 23/6 Aust.

HAWTREY, R. G. *Cross Purposes in Wage Policy.* (Longmans, London, 1955.) Pp. 148. 12/6 Aust.

HENSEN, HARTMUT. *Die Finanzen der Sozialen Sicherung im Kreislauf der Wirtschaft.* (Kieler Studien, 36.) (Institut für Weltwirtschaft, Kiel, 1955.) Pp. 204. DM 16.

This is an economic analysis of the finance of West German social security in the recent past.

HILDRETH, CLIFFORD, and JARRETT, F. G. *A Statistical Study of Livestock Production and Marketing.* (Cowles Commission Monograph No. 15.) (John Wiley and Sons, New York; Chapman and Hall, London, 1955.) Pp. 156. $4.50.

HOFFMANN, W. *British Industry 1700-1950.* (Blackwell, Oxford, 1955.) Pp. 338. 35/- stg.

HOOPER, SHADRACH G. *The Finance of Farming in Great Britain.* (Europa Publications, London, 1955.) Pp. 247. 25/- stg.

HUMPHREY, DON D. *American Imports.* (The Twentieth Century Fund, New York, 1955.) Pp. 546. $6.00.

INSTITUTE OF BANKERS. *International Banking and Foreign Trade.* (Europa Publications, London, 1955.) Pp. 226. 20/- stg.

INTERNATIONAL LABOUR OFFICE. *Unemployment Insurance Schemes.* (International Labour Office, Geneva, 1955.) Pp. 254. 9/- stg.

JÖHR, W. A., and SINGER, H. W. *The Role of the Economist as Official Adviser.* (George Allen and Unwin, London, 1955.) Pp. 150. 15/- stg.

KAHLE, OLGA. *Die frachtkostenmässige Lage der Schleswigholsteinischen Land-und Ernährungswirtschaft im übergebietlichen Versand ihrer Produktionsüberschüsse.* (Kieler Studien, 37.) (Institut für Weltwirtschaft, Kiel, 1955.) Pp. 131. DM 12.

KALDOR, NICHOLAS. *An Expenditure Tax.* (George Allen and Unwin, London, 1955.) Pp. 249. 18/- stg.

KLEIN, L. R., and GOLDBERGER, A. S. *An Econometric Model of the United States, 1929-1952.* (North-Holland Publishing Co., Amsterdam, 1955.) Pp. 165. 17 guilders.

KURIHARA, KENNETH K. (ed.). *Post-Keynesian Economics.* (George Allen and Unwin, London, 1955.) Pp. 442. 30/- stg.

KUZNETS, SIMON, MOORE, WILBERT E., and SPENGLER, JOSEPH J. (ed.). *Economic Growth: Brazil, India, Japan.* (Duke University Press, Durham, N.C., 1955.) Pp. 613. $12.50.

LEHBERT, BEN. *Entwicklungstendenzen in der westeuropäischen Energiewirtschaft.* (Kieler Studien, 35.) (Institut für Weltwirtschaft, Kiel, 1955.) Pp. 84. DM 10.

This study of the development of the West European fuel and power industries includes a 38-page statistical appendix, as well as 18 tables in the text. It shows strikingly the increase in the efficiency of fuel utilization since 1920.

LEWIS, W. ARTHUR. *The Theory of Economic Growth.* (George Allen and Unwin, London, 1955.) Pp. 453. 30/- stg.

LUNDBERG, ERIK (ed.). *The Business Cycle in the Post-War World.* (Proceedings of a Conference held by the International Economic Association, Oxford, September 1952.) (Macmillan, London, 1955.) Pp. 367. 30/- stg.

LYDALL, H. F. *British Incomes and Savings.* (Institute of Statistics Monograph No. 5.) (Blackwell, Oxford, 1955.) Pp. 274. 32/6 stg.

MA, RONALD A., and SZCZEPANIK, EDWARD F. *The National Income of Hong Kong 1947-1950.* (Geoffrey Cumberlege, Oxford University Press, for Hong Kong University Press, London, 1955.) Pp. 69. 23/6 Aust.

MAIN, O. W. *The Canadian Nickel Industry.* (Canadian Studies in Economics—No. 4.) (University of Toronto Press, Toronto, 1955.) Pp. 168. $3.25.

MEADE, J. E. *Trade and Welfare. (The Theory of International Economic Policy,* Volume II.) Issued under the auspices of the Royal Institute of International Affairs. (Oxford University Press, London, 1955.) Pp. 618. 64/9 Aust.

MEHTA, M. M. *Structure of Indian Industries.* (Popular Book Depot, Bombay, 1955.) Pp. 340. Rs. 22/8.

MORGENSTERN, OSKAR. *The Validity of International Gold Movement Statistics.* (Special Papers in International Economics, No. 2.) (International Finance Section, Department of Economics and Sociology, Princeton University, 1955.) Pp. 42. Free on application.

MURRAY, KEITH A. H. *Agriculture.* (History of the Second World War. United Kingdom Civil Series.) (Her Majesty's Stationery Office and Longmans, Green, London, 1955.) Pp. 422. 30/- stg.

NEUFELD, E. P. *Bank of Canada Operations, 1935-54.* (University of Toronto Press, Toronto, 1955.) Pp. 221. $3.75.

PERRY, J. HARVEY. *Taxes, Tariffs and Subsidies. A history of Canadian fiscal development.* (University of Toronto Press, Toronto, 1955.) Two volumes. Pp. 763. $25 per set.

PETERSEN, WILLIAM. *Planned Migration. The Social Determinants of the Dutch-Canadian Movement.* (University of California Publications in Sociology and Social Institutions, Volume 2.) (University of California Press, Berkeley and Los Angeles, 1955.) Pp. 273. $3.50.

PETHE, VASANTKUMAR, and PETHE, BHARATI. *Elements of Economics for Inter Arts, Inter Com. and B.A. (General).* (Suras Granthamala, Sholapur, 1954.) Pp. 338. Rs. 5.

PHELPS, CLYDE WILLIAM. *Using Instalment Credit.* (Studies in Consumer Credit, No. 4.) (Commercial Credit Company, Baltimore, 1955.) Pp. 80. Limited supply free.

This is one of a series of studies being made, with the help of a grant from the Commercial Credit Company, at the University of Southern California.

PIGOU, A. C. *Income Revisited.* (Macmillan, London, 1955.) Pp. 87. 6/- stg.

RILEY, VERA, and ALLEN, ROBERT LORING. *Interindustry Economic Studies. A Comprehensive Bibliography on Interindustry Research.* (The Johns Hopkins Press, Baltimore, 1955.) Pp. 280. $2.50.

Such is the onrush of literature in the wake of Leontief that workers in this field have long since been forced to maintain their own bibliography. This comprehensie bibliography is therefore invaluable as a record of the first twenty years of input-output analysis.

SAMUELSON, PAUL A. *Economics: An Introductory Analysis.* (Third Edition.) (McGraw-Hill, New York, 1955.) Pp. 753. $5.75.

The changes in the new edition of this famous text-book are designed, according to the author's preface, to change its stress to "efficient growth and security", instead of "inflation" as in the Second Edition, or "depression" as in the First Edition. All facts and figures have been brought up to date. Some material has been transposed and used more effectively, e.g. the section on Pricing, formerly in the last chapter and now in the Appendix on Welfare. Some material has been completely rewritten, e.g. the Chapter on Interest and Capital. The Chapter on "Incomes from Agriculture, Property and Labour" has been omitted and two new Chapters on "War and Defense" and "Economic Growth" have been added. The book's entertainment value has also been increased by the quotations at the head of each chapter. These changes will certainly help to keep the book a best-seller, but the great bulk of the material will be readily recognisable to those who are familiar with the previous edition.

SCIENCE COUNCIL OF JAPAN (Division of Economics and Commerce), Tokyo. Six publications (no price stated) as follows:

No. 1—*Business Cycles in Post-war Japan.* By Shigeto Tsuru. 1953. Pp. 34.

No. 2—*On Cultural Conditions Affecting Population Trends in Japan.* By Nomura Kanetaro. 1953. Pp. 35.

No. 3—*Essays in Public Finance.* By Hanya Ito. 1954. Pp. 112.

No. 4—*The Historical Development of Economic Dynamics.* By Shinichi Ichimura. 1955. Pp. 37.

No. 5—*Level of Living in Japan.* By Hiromi Arisawa. 1955. Pp. 51.

No. 6—*Japan's Trade and Her Level of Living.* By Shigeru Fujii. 1955. Pp. 76.

SCOTT, ANTHONY. *Natural Resources: The Economics of Conservation.* (Canadian Studies in Economics—No. 3.) (University of Toronto Press, Toronto, 1955.) Pp. 184. $3.25.

SEGURA, FRANCISCO. *Social Humanism.* (Published by the author, Barcelona, 1955.) Pp. 64. No price stated.

SHACKLE, G. L. S. *Uncertainty in Economics.* (Cambridge University Press, London, 1955.) Pp. 267. 25/- stg.

SINGH, BALJIT. *A Report on Unemployment in the City of Lucknow.* (Institute of Sociology and Human Relations, Lucknow University, 1955.) Pp. 51. No price stated.

SNYDER, RICHARD M. *Measuring Business Changes. A Handbook of Significant Business Indicators.* (John Wiley and Sons, New York, and Chapman and Hall, London, 1955.) Pp. 382. $7.95.

SOVANI, N. V., and DANDEKAR, KUMUDINI. *Fertility Survey of Nasik, Kolaba and Satara (North) Districts.* (Gokhale Institute of Politics and Economics, Poona, 1955.) Pp. 167. 9/- stg.

UNITED NATIONS. *Economic Developments in the Middle East, 1945 to 1954.* (Supplement to World Economic Report, 1953-54.) (United Nations, New York, 1955.) Pp. 236. 17/6 stg.

UNITED NATIONS. *Review of Economic Activity in Africa, 1950 to 1954.* (Supplement to World Economic Report, 1953-54.) (United Nations, New York, 1955.) Pp. 146. 11/- stg.

UNITED NATIONS. *Scope and Structure of Money Economies in Tropical Africa.* (United Nations, New York, 1955.) Pp. 52. 3/9 stg.

UNITED NATIONS. *The Quest for Freer Trade.* (United Nations, New York, 1955.) Pp. 59. 3/- stg.

UNITED NATIONS. *World Economic Report, 1953-54.* (United Nations, New York, 1955.) Pp. 163. 12/6 stg.

WEISSKOPF, WALTER A. *The Psychology of Economics.* (Routledge and Kegan Paul, London, 1955.) Pp. 266. 25/- stg.

WICKSTEED, PHILIP H. *The Alphabet of Economic Science.* (Reprints of Economic Classics.) (Kelley and Millman, New York, 1955.) Pp. 142. $4.50.

WOLF, CHARLES, Jr., and SUFRIN, SIDNEY C. *Capital Formation and Foreign Investment in Underdeveloped Areas.* (Maxwell School Series—I.) (Syracuse University Press, Syracuse, N.Y., 1955.) Pp. 134. $3.00.

WOYTINSKY, W. S. and E. S. *World Commerce and Governments, Trends and Outlook.* (The Twentieth Century Fund, New York, 1955.) Pp. 907. $10.00.

ATLAS PUBL. & DISTR. CO. LTD., London; G. E. STECHERT & CO., New York; HERMANN & CIE, Paris; NICOLA ZANICHELLI, Bologna; H. BOUVIER u. CO., Bonn a/Rh; y. VILLEGAS, Madrid; F. MACHADO & CIA, Porto; FRIEDRICH KILIAN'S NACHFOLGER, Budapest; F. ROUGE & CIE, Lausanne; THE MARUZEN COMPANY, Tokyo.

"SCIENTIA"

INTERNATIONAL REVIEW OF SCIENTIFIC SYNTHESIS

(A Review covering all Sciences) (1955—49th year)

Chief Editor: P. BONETTI.

Scientific Committee: G. ABETTI, R. ALMAGIA, G. COLOMETTI, A. GHIGI, F. GIORDANI, G. GOLA, M. GORTANI, G. LEVI DELLA VIDA, G. MONTALENTI, A. NICEFORO, E. PERSICO, M. PONZO, P. RONDONI, F. SEVERI.

"SCIENTIA" is the only review of its type which—has a world-wide circulation—deals with the most recent and fundamental problems of all branches of science—can boast among its contributors of the most illustrious men of science in the whole world—publishes the articles in the native language of their Authors (English, French, Italian, German, Spanish). Each issue includes a **Supplement** containing the complete French translation of the articles which in the text are published in language other than French.

"SCIENTIA" has therefore a very strong appeal to the scientific-minded reader all over the world. Full details and a free back copy will be sent by applying to "SCIENTIA," ASSO (COMO, ITALY), sending 1 sh. 11 d., or equivalent amount in other currency, preferably air-mail postage stamps of your country, merely to cover packing and postage. For a number of the current year, please send 8 sh., or equivalent amount in other currency, which will be deducted from the subscription price. Annual Subscription, £4/10/- stg.